L 04223-67 EWT(1)/EWT(m) GW

ACC NR: AR6031858 SOURCE CODE: UR/0058/66/000/006/V049/V049

AUTHOR: Gudkova, L. Ya.; Degtyarev, S. F.; Kukhtevich, V. I.; Zolotukhin, V. G.

TITLE: Scattered-neutrons field at the interface of earth and water with air

SOURCE: Ref. zh. Fizika, Abs. 6V405

REF SOURCE: Byul Inform. tsentra po yadern. dannym, vyp. 2, 1965, 346-382

TOPIC TAGS: scattered neutron field, earth air boundary, water air boundary, neutron flux, neutron dose rate, spatial variable, initial neutron energy

ABSTRACT: The basic characteristics of the scattered-neutrons field at the interface of earth and water with air have been investigated by both calculation and experimental methods. The dependence of flux and dose rate on spatial variables and on initial neutron energy was studied. A modification of the Monte-Carlo method, known as the method of the local calculation of the flux, was used for computation, and it was assumed that earth is a mixture of dry sand SiO_2 with a density of 1.7 g/cm^3 and contains 10 wt % water. The case of water was

Card 1/2

L 04223-67
ACC NR: AR6031858

investigated separately. In the method of calculation consideration was given to all the known interaction processes between neutrons and the nuclei of the substance in the energy range of 1 ev—10 Mev. The results are presented in numerous graphs and tables. [Translation of abstract]

SUB CODE: 18, 20/

Card 2/2

L 45587-65 EWT(m) Peb DIAAP DM S/0089/65/018/003/0251/0252

ACCESSION NR: AP5009115

AUTHOR: Yermakov, S. M.; Zolotukhin, V. G.; Kukhtevich, V. I. Matusevich, Ye. S.; Yefimenko, B. A. 19

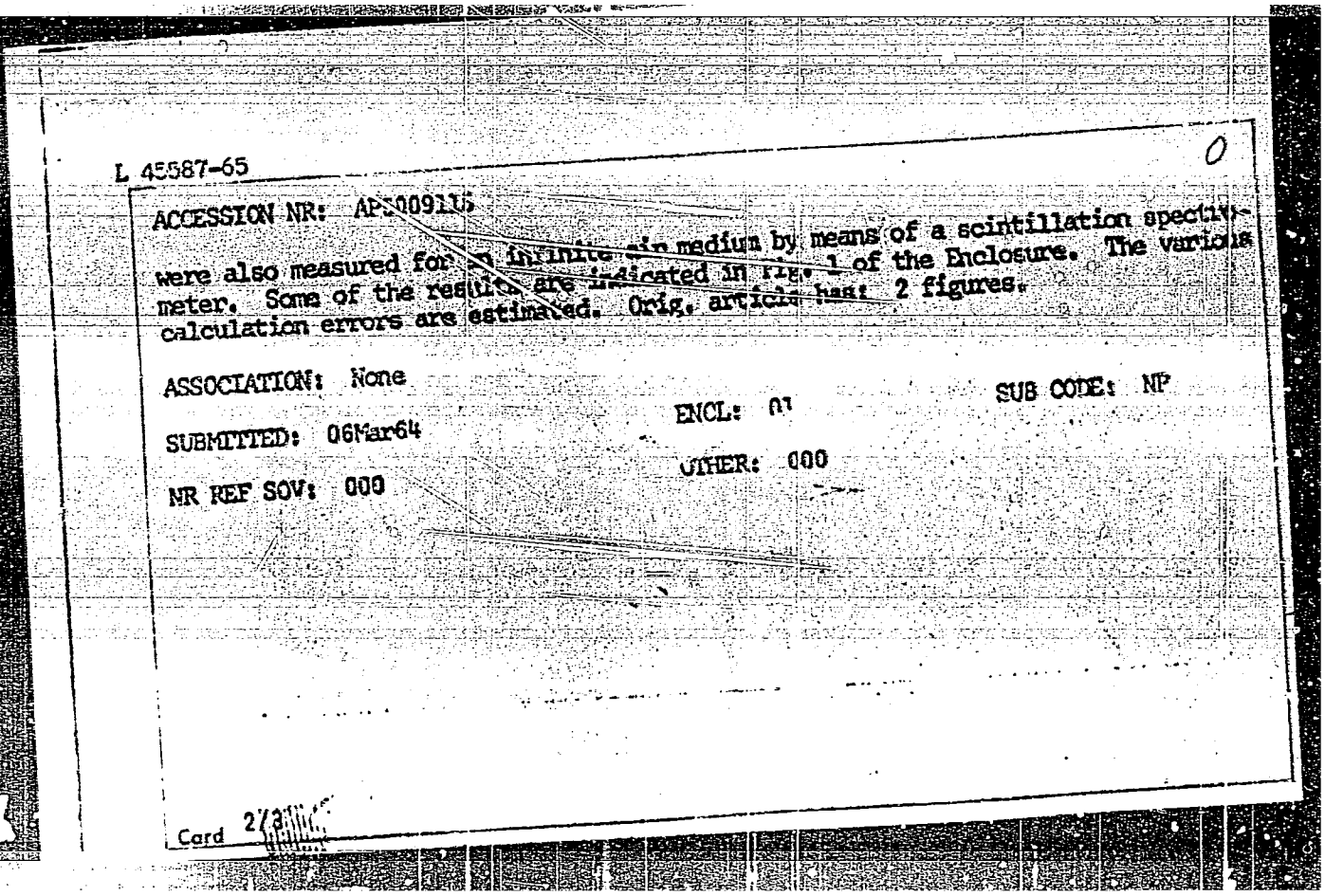
TITLE: Spatial and energy distribution of scattering Gamma radiation from a unidirectional source in an infinite air medium

SOURCE: Atomnaya energiya, v. 18, no. 3, 1965, 251-252

TOPIC TAGS: reactor Gamma radiation, spatial distribution, energy distribution, Gamma ray scattering

ABSTRACT: The field of the scattered gamma radiation was investigated both by the Monte-Carlo method and experimentally. The adaptation of the Monte-Carlo calculation to the present problem was discussed by the authors elsewhere (Voprosy fiziki zashchity reaktorov [Problems of Reactor Shielding], Gosatomizdat, 1963, p. 171). The energy distributions were calculated for orientation angles of the unidirectional source ranging from 2—1800 (10 values). Distributions are also calculated for the following: (1) source-detector distance of 16 meters and initial energies of 2.5, 3.0, and 7.0 MeV, (2) average energy 1.25 MeV at distances 5, 16, and 30 meters, (3) distance of 16 m and an average energy 1.25 MeV (from a Co60 source) at angles 60, 90, 120, and 1500. The values of the distribution function

Card 1/2



L 45587-65

ACCESSION NR: AP5009115

were also measured for an infinite slab medium by means of a scintillation spectrometer. Some of the results are indicated in Fig. 1 of the Enclosure. The various calculation errors are estimated. Orig. article has: 2 figures.

ASSOCIATION: None

SUBMITTED: 06Mar64 ENCL: 01 SUB CODE: NP

NR REF SOV: 000 OTHER: 000

Card 2/3

DEGTYAREV, S.F.; KUKHTEVICH, V.I.

Spatial distribution of the dose rate of neutrons, scattered in the air, emanating from a monodirectional point source. Atom. energ. 18 no.3:253-254 Mr '65. (MIRA 18:3)

L 58756-65 EWA(h)/EWT(m) DM

ACCESSION NR: AP5012484 UR/0089/65/018/004/0416/0418 20 19 B

539.121.72 + 539.122

AUTHORS: Yermakov, S. M.; Yefimenko, B. A.; Zolotukhin, V. G.; Kolevatov, Yu. A.; Kukhtevich, V. I. 19

TITLE: Spatial and energy distribution and dose rate of gamma radiation of unidirectional and isotropic sources of Co-60 at the ground-air interface

SOURCE: Atomnaya energiya, v. 18, no. 4, 1965, 416-418

TOPIC TAGS: gamma radiation, spatial distribution, energy distribution, unidirectional source, isotropic source, cobalt 60 source, air ground interface

ABSTRACT: The article presents the results of measurements and Monte-Carlo calculations of the spatial and energy distributions of scattered gamma radiation from a unidirectional Co^{60} source (average energy 1.25 MeV) at a source-detector distance equal to 15 and 30 meters, and for the source and detector raised to equal height (2, 10,

Card 1/3

30, and 53 meters) above ground. The measurement and the calculations were carried out for two angles (60 and 90°) of orientation of the unidirectional source. The source was in the form of a sphere 0.005 meters in diameter, covered with a shadow shield with total aperture angle 5°. The detector was a scintillation spectrometer with NaI(Tl) crystal with diameter and height 0.04 meters. The variant of the Monte-Carlo method used for the calculation of the gamma radiation spectrum, known as the method of local flux calculation, was described by the authors elsewhere (in collection: Voprosy fiziki zashchity realktorov [Problems in Reactor Shielding Physics]; edited by D. L. Broder et al., Gosatomizdat, 1963, p. 171). A comparison of the calculated and measured spatial and energy distributions of the scattered gamma radiation shows a spreading of the maxima in the experimental data, owing to the finite energy resolution of the spectrometer and the relatively large aperture of the source angle. The calculated and measured spatial and energy distributions of scattered gamma radiation from an isotropic source are in better agreement and practically coincide with distribution for infinite height. The calculated and experimental dose rates from a unidirectional and from

L 58756-65
ACCESSION NR: AP5012484

2

an isotropic source are also in good agreement. 'The authors thank Yu. I. Bublik, and K. G. Ivanov for help with the experiment.'
Original article has: 3 figures, 2 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 13Aug64 ENCL: 00 SUB CODE: NP

NR REF SOV: 002 OTHER: 002

Card 3/3

L 05064-67 EWT(m)/EWP(t)/ETI LIP(c) JD/JG/JR/GD

ACC NR: AT6027938 SOURCE CODE: UR/0000/66/000/000/0202/0205

AUTHOR: Degtyarev, S. F.; Kukhtevich, V. I.; Matusevich, Ye. S.; Popov, V. I.

ORG: None

TITLE: Spectra of air-scattered neutrons from a Po-α-Be source surrounded by iron shielding of various thickness

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding): sbornik statey, no. 2. Moscow, Atomizdat, 1966, 202-205

TOPIC TAGS: radiation shielding, neutron energy distribution, neutron spectrum, neutron scattering

ABSTRACT: The authors measure the energy distributions of neutrons scattered in the unbounded atmosphere. The distance between source and detector was set at 10 m. A composite Po-Be source with an intensity of approximately $5 \cdot 10^8$ neutr/sec was used with surrounding iron shielding with wall thicknesses of 5, 10 and 15 cm. A spherical ionization chamber filled with a mixture of 5 atm of argon and 5 atm of hydrogen was used for neutron detection. The measurements were made in the 0.8–3.0 Mev range. The results show unbalanced neutron spectra in iron at low energies (average spectral energy from the Po-Be source is 4.5 Mev). The initial neutron spectrum is softened by scattering in air at the energies studied. The number of scattered neutrons decreases

Card 1/2

L 05064-67

ACC NR: AT6027938

smoothly with respect to the number of unscattered neutrons with an increase in the initial energy from 0.28 at E_n=0.8 Mev to 0.15 at E_n=3 Mev. The data in this paper may be used for modeling various descending continuous spectra and for estimating and calculating the background due to neutrons scattered in air. Orig. art. has: 3 figures.

SUB CODE: 18/ SUBM DATE: 12Jan66/ ORIG REF: 003/ OTH REF: 001

Card 2/2

L 05380-67 EWT(m) JD/AR

ACC NR: AT6027939 SOURCE CODE: UR/0000/66/000/000/0206/0209

AUTHOR: Degtyarev, S. F.; Kukhtevich, V. I.; Tarasov, V. V. 29 B+1

ORG: None

TITLE: Experimental study of the propagation of thermal neutrons 19 close to the source in the unbounded atmosphere

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics or reactor hielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 206-209 74

TOPIC TAGS: thermal neutron, neutron distribution, fast neutron, neutron scattering

ABSTRACT: The density of thermal neutrons is experimentally studied to provide data for computing capture γ-radiation in air. A Po-Be fast neutron source was used in a paraffin block having walls 20 cm thick. Thermal neutrons are taken as those with an energy below the cadmium threshold E_n <0.4 Mev and neutrons with greater energies are called fast neutrons. An SNM-0 boron counter was used for measuring the density of thermal neutrons. The source and detector were located at an altitude of 60 m to eliminate the effect of neutrons scattered from the earth. Three quantities were measured directly: 1. the density of neutrons throughout the entire spectrum escaping from the paraffin block; 2. the density of thermal neutrons formed from the fast neutrons; 3. the density of fast neutrons escaping from the source and propagated in the

Card 1/2

ACC NR: AT6027939

atmosphere. The results show that the fraction of thermal neutrons produced by attenuation in the atmosphere is small in comparison with the thermal neutrons for the given spectrum. A comparison of experimental and theoretical data for thermal neutron distribution shows excellent agreement at a source temperature of 293°K with some discrepancy when the source temperature is increased to 440°K. Experimental error is less than 6-10%. This discrepancy between experimental and theoretical data is not understood and requires further study. Orig. art. has: 2 figures, 1 table, 2 formulas.

SUB CODE: 18/ SUBM DATE: 12Jan66/ ORIG REF: 004/ OTH REF: 001

Card 2/2

L 02381-67 EWA(h) JR/GD

ACC NR: AT6027940 SOURCE CODE: UR/0000/66/000/000/0210/0215

AUTHOR: Degtyarev, S. F.; Kukhtevich, V. I.

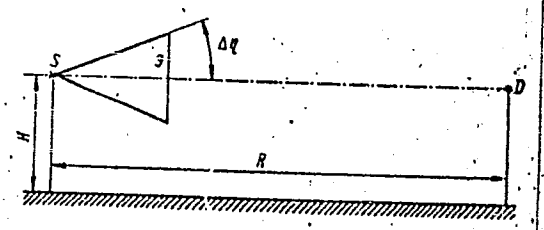
ORG: None

TITLE: Spatial distribution of the dose rate from an isotropic point source of neutrons in the atmosphere and at the air-earth interface

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 210-215

TOPIC TAGS: radiation source, neutron distribution, radiation dosimetry

ABSTRACT: Experimental results are given on the spatial distribution of relative dose rate for neutrons scattered in the unbounded atmosphere and at the air-earth interface from an isotropic point source with average initial spectral energies of 4.2 Mev (Po-Be source) and 1.9 Mev (Po-Be source in an iron sphere with a wall thickness of 6 cm). The experimental setup is shown in the figure where 3 is a conical screen between the source and detector to eliminate the



Card 1/3

L 05381-67

ACC NR: AT6027940

effect of direct radiation. An isodose neutron dosimeter was used for neutron detection. The detector has a noticeable anisotropy and therefore the dose rates were measured at 3 mutually perpendicular positions of the detector and the results were averaged. The angles $\Delta\eta$ were determined experimentally and were 19, 25, 38, 48 and 58° for the Po-Be source and 10, 17, 23, 34, 44 and 54° for the 1.9 Mev source. The distance R was varied from 9.8 to 30.5 m and the height H was adjustable from 1 to 50 m. It was found that an increase in the height H results in an increase in the relative dose rate up to ≈5 m followed by a smooth reduction in dose rate with an increase in height above this point. The dose rate as a function of distance R is approximately linear. The dose rate as a function of distance, height and initial neutron energy when H is held constant is given by the expression

$$D(R, H, \bar{E}_0) = L(H, \bar{E}_0) \cdot R^{2-\eta(H)}$$

for R from 7 to 30 m and H from 2 to 30 m. In this formula

$$\eta(H) = 2\exp\left[-\frac{\sqrt{H}}{2\left(1-\frac{H-2}{H^{1.65}}\right)}\right] + 1,$$

$$L(H, \bar{E}_0) = \frac{6}{H\sqrt{\bar{\lambda}}},$$

where $\bar{\lambda}$ is the mean free path of the neutrons in air [illegible] given spectrum. A table

Card 2/3

L 05381-67

ACC NR: AT6027940

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927310005-

comparing experimental data for the dose rate with [illegible] results of this expression show excellent agreement. The simple expression

$$D(R, \bar{E}_0) = 0{,}19 \cdot \frac{R}{\sqrt{\bar{\lambda}}}$$

may be used for practical calculations of the relative dose rate for initial neutron energies of less than 6 Mev. In conclusion the author[illegible] thank V. V. Ivanov, Yu. V. Fadeyev and Ye. T. Bonuarev for assistance with the work. Orig. art. has: 4 figures, 1 table, 8 formulas.

SUB CODE: 18/ SUBM DATE: 12Jan66/ ORIG REF: 002/ OTH REF: 001

Card 3/3

L 05382-67 EWT(m) JR/GD

ACC NR: AT6027941 SOURCE CODE: UR/0000/66/000/000/0[illegible]

AUTHOR: Kolevatov, Yu. I.; Kukhtevich, V. I.; Trykov, O. A.

ORG: None

TITLE: Energy distribution and dose rate of gamma quanta scattered at the air-earth interface

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 216-225

TOPIC TAGS: gamma radiation, angular distribution, radiation source

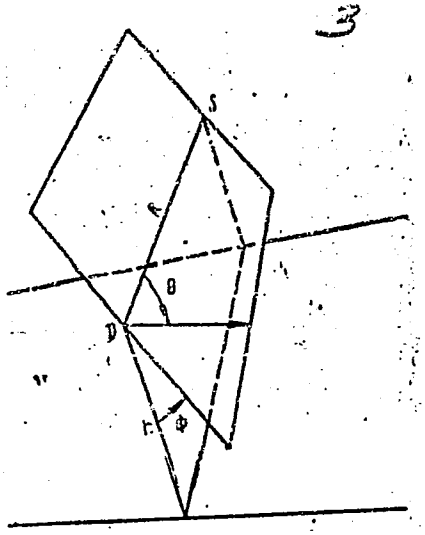
ABSTRACT: The authors study the angular energy distribution of scattered γ-radiation from an isotropic point source (Co^{60}) at source-to-detector distances of 50 and 30 m and heights above ground level of 2-53 m. A method is proposed for determining the scattering field of γ-radiation close to the boundary between two media based on an analysis of the results of this work and a comparison with the data in the literature. The geometry of the experiment is shown in the figure. About 70 energy distributions were measured in all covering a range of 12-180° for θ and 0-140° for φ. The results show that the parameters h, R, θ and φ have a characteristic effect on the form of the angular energy distributions. Sharp maxima are observed in the energy region above

Card 1/2

ACC NR: AT6027941

0.22 Mev due to single scattering of γ-quanta from the surface of the earth at an angle ψ given by the expression

$$\operatorname{tg}\psi = \frac{2\sin^2\theta}{\sin 2\theta - \frac{2h}{R\cos\varphi}}$$



In the limiting case at an infinite distance from the surface of the earth the angular energy distributions have a maximum in the region of approximately 0.22 Mev due to single scattering of γ-quanta through an angle π. The spatial energy distributions of scattered γ-quanta from an isotropic point source also show a maximum in the region of approximately 0.22 Mev which disappears with a reduction in the ratio h/R. A comparison of the theoretical and experimental data for the spatial distribution of the dose rate of scattered γ-radiation from an isotropic source close to the earth-air interface as a function of h and R shows agreement with an average accuracy of ±20%. The authors thank Yu. V. Fadeyev, A. I. Novikov and N. I. Soldatov for assistance with the work. Orig. art. has: 7 figures, 2 tables, 7 formulas.

SUB CODE: 18/ SUBM DATE: 12Jan66/ ORIG REF: 008/ OTH REF: 004

Card 2/2

L 06979-67 EWT(m) JR
ACC NR: AP6018354 (N) SOURCE CODE: UR/0089/65/020/005/0424/0424

AUTHOR: Kazanskiy, Yu. A.; Kukhtevich, V. I.; Popov, V. I.; Tarasov, V. V.; Shemetenko, B. P.

41
B

ORG: none

TITLE: Dependence of the buildup factor on the location of the detector behind the shield

SOURCE: Atomnaya energiya, v. 20, no. 5, 1966, 424

TOPIC TAGS: reactor shielding, gamma scattering, gamma detection, scintillation detector

ABSTRACT: This is an abstract of article No. 76/3559, submitted to the editor and filed, but not published in full. Inasmuch as earlier investigations of the buildup factors, with the aid of which account is taken of the scattered gamma radiation, were made for observation points situated either inside or on the surface of the shield, the authors measured the accumulation factors with a radioactive source of gamma radiation (Cs^{137}) at different positions of the detector and the source behind an aluminum barrier of thickness equal to 2.8 mean free paths and of diameter

Card 1/2 UDC: 539.122:539.121.72

L 06979-67

ACC NR: AP6018354

0

40 cm. The measurements were made with a scintillation detector (stilbene crystal). The distance from the source to the shield surface facing the detector ranged from 18 to 150 cm. For each value of this distance, the distance from the surface of the shield to the detector was varied from 0 to 500 cm. The results show that the decrease of the accumulation factor with increasing distance R has the form $(1/\sin\theta)\exp(-k_T\theta)$ for a point-like isotropic source on the surface of the shield, and the form $\exp(-k_p\theta)$ for a plane parallel beam. The test results were compared with values calculated in accordance with a semiempirical procedure described by the authors earlier (Byulleten' Informatsionnogo tsentra po yadernym dannym [Bull. of Information Center on Nuclear Data] no. 2, Atomizdat, 1965, p. 305. Orig. art. has: 1 figure.

SUB CODE: 18 SUBM DATE: 30Dec65/ ORIG REF: 002 OTH REF: 002

Card 2/2

ACC NR: AP6034091 (N) SOURCE CODE: UR/0089/66/021/004/0246/0254

AUTHOR: Trykov, L. A.; Goryachev, I. V.; Kukhtevich, V. I.

ORG: none

TITLE: Measurement of the dose albedo of fast neutrons when different shields are used

SOURCE: Atomnaya energiya, v. 21, no. 4, 1966, 246-254

TOPIC TAGS: neutron albedo, fast neutron, neutron shielding, neutron energy distribution, neutron spectrum, radiation dosimetry

ABSTRACT: The authors investigated the energy distribution of fast neutrons reflected from iron, ground, water, and polyethylene under normal and oblique incidence of a broad unidirectional beam of neutrons on the surface of the reflector. They also investigated the dependence of the albedo of the neutrons on the thickness of a flat reflector layer made of iron. The measurements were made with an isotropic detector placed on the surface of the shield. The neutrons were obtained from a zero-power research reactor. The detector was a single-crystal scintillation neutron spectrometer similar to that described by Yu. A. Kazanskiy et al. (Atomnaya energiya v. 20, 143, 1966). The mean square measurement error was not larger than 50% for water and polyethylene and 10% for iron and ground. Two methods were used to measure the albedo, one by recording the number of reflected neutrons against the background of the direct radiation (difference method), and by suppressing the unscattered neutrons with a

Card 1/2 UDC: 621.039.58: 539.125.52

ACC NR: AP6034091

shielding cone. The methods yielded results that agreed within 10%. Plots of the reflected-neutron spectra are presented and empirical formulas for them are given. The results show that the dose albedo of the neutrons depends on the thickness of the iron layer employed. The angular dependence of the dose albedo of neutrons reflected from iron and from ground show a similar behavior, decreasing with increasing angle of incidence. In the case of water, however, the dose albedo shows a slight increase with angle (up to 70°). This is attributed to the predominant forward scattering of neutrons by hydrogen atoms. The results are found to agree with those obtained by others. Orig. art. has: 7 figures and 2 formulas.

SUB CODE: 18, 20/ SUBM DATE: 05Apr66/ ORIG REF: 003/ OTH REF: 004

Card 2/2

ACC NR: AF7000798 (A,N) SOURCE CODE: UR/0089/66/021/005/0392/0394

AUTHOR: Degtyarev, S. F.; Kukhtevich, V. I.; Suvorov, A. P.; Tarasov, V. V.; Tikhonov, V. K.; Tsypin, S. G.

ORG: none

TITLE: Angular distributions of fast neutrons emerging from hydrogen-containing media

SOURCE: Atomnaya energiya, v. 21, no. 5, 1966, 392-394

TOPIC TAGS: fast neutron, neutron distribution, lithium compound, water, neutron radiation, radiation intensity, neutron shielding, neutron detector

ABSTRACT: The authors report results of experiments on the angular distributions of the flux (dose intensity) of fast neutrons with energy $E \geq 0.7$ Mev, emerging from plates of lithium hydride of 0.5 g/cm^3 density and 15, 30, 45, and 60 cm thick, and from layers of water 15 and 45 cm thick. The radiation source was a collimated beam of neutrons (plane unidirectional source). The neutron spectrum was similar to that of the BSR reactor. The measurements were made for angles 0 - 55°. The neutrons were registered with a fast-neutron scintillation detector consisting of a Plexiglas tablet with ZnS(Ag) admixture, secured to the end window of a photomultiplier (FEU-59). The results show that for angles larger than 10° a change in the plate thickness has little effect on the form of the angular distribution. At angles 0 - 10°, the neutron flux exhibits a pronounced peak due essentially to unscattered neutrons. With increasing thickness of lithium-hydride plates, the height and width of this

Card 1/2 UDC: 539.125.5: 539.121.72

ACC NR: AP7000798

peak decrease, owing to the increase in the fraction of scattered neutrons. The results for lithium agree satisfactorily with results of many-group calculations by the authors (Voprosy fiziki zashchity reaktorov [Problems in the Physics of Reactor Shielding], edited by D. L. Broder et al., no. 2, M., Atomizdat, 1966, p. 18). The results for lithium and water are likewise in good agreement with similar measurements by others. The results also show that there is little difference in the data for lithium hydride, polyethylene, and water, the results agreeing within 20% at angles 20 - 60°, and by not more than 30% at smaller or larger angles. The authors used results of individual measurements by L. A. Trykov and I. V. Goryachev. Orig. art. has: 5 figures and 2 formulas.

SUB CODE: 20/18/ SUBM DATE: 05Jul66/ ORIG REF: 002/ OTH REF: 003

Card 2/2

ACC NR: AP7000799 (A,N) SOURCE CODE: UR/0089/66/021/005/0394/0395

AUTHOR: Bozin, G. M.; Degtyarev, S. F.; Kukhtevich, V. I.; Sinitsyn, B. I.; Tikhonov, V. K.; Staroverov, V. B.; Tsypin, S. G.

ORG: none

TITLE: Passage of fast neutrons through thick layers of lithium hydride

SOURCE: Atomnaya energiya, v. 21, no. 5, 1966, 394-395

TOPIC TAGS: fast neutron, neutron radiation, radiation intensity, lithium compound, neutron shielding, neutron distribution

ABSTRACT: The authors investigated experimentally the attenuation of the flux (dose intensity) of fast neutrons in lithium hydride of density 0.5 g/cm^3. The unidirectional neutron source employed and its spectrum are described in a preceding paper in the same source (p. 392, Acc. Nr. AP7000798). The shield tested was made up of blocks of lithium hydride with channels for the detector. The empty channels were sealed during the measurements with stoppers made of the same material. The transverse dimensions of the shielding blocks were chosed such taht the detector plates inside the shield was under conditions of so-called infinite geometry. To determine the accumulation factor in the lithium hydride, measurements were made of the neutron attenuation in good geometry under careful collimation of the source and detector. The fast-neutron flux was registered with a scintillation counter with a tablet of ZnS(Ag) mixed with Plexiglas. Plots for the attenuation of neutrons with energy

Card 1/2 UDC: 539.125.5: 539.121.72

ACC NR: AP7000799

E > 0.7 Mev as functions of the thickness, and of the accumulation factor of the fast neutrons as functions of the thickness are presented and found to agree satisfactorily with calculations based on formulas derived for conditions of broad geometry. Orig. art. has: 2 figures and 2 formulas.

SUB CODE:20,18/ SUBM DATE: 05Jul66/ ORIG REF: 003

Card 2/2

KATSOBASHVILI, Ya.R., KURKOVA, N.S.; KUKHTICHEVA, V.F.

Refining of fuel oil by destructive hydrogenation under pressure of 30 atmospheres in the presence of a circulating diluent. Trudy Inst.nefti 13 '59. (MIRA 13:12)
(Petroleum as fuel)

KATSOBASHVILI, Ya.R.; KURKOVA, N.S.; LIKHOBABENKO, V.S.; LEVITSKIY, E.A.; KUZ'MINA, T.N.; KUKHTICHEVA, V.F.; MOSOLOVA, F.A.

Preparation of mechanically strong catalysts based on aluminum oxide. Trudy Inst. nefti 14:160-186 '60. (MIRA 14:5)
(Catalysts)
(Aluminum oxide)

KATSOBASHVILI, Ya.R.; KURKOVA, N.S.; LIKHOBABENKO, V.S.; LEVITSKIY, E.A.; KUZ'MINA, T.N.; KUKHTICHEVA, V.F.; MASOLOVA, F.A.

Effect of the conditions under which the hydroxide precipitates on the mechanical durability of aluminum oxide. Izv. AN SSSR. Otd. khim. nauk no.2:245-250 F '61. (MIRA 14:2)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Alumina)

KUKHTIKOV, G., kranovshchik (Moskovskaya obl.)

A jump more than head-high. Izobr.i rats. no.5 (201):29 '63.
(MIRA 16:7)
(Cranes, derricks, etc.—Technological innovations)

KUKHTIKOV,M.M.

"Contribution to the Geomorphology of the Valley in the Upper Reaches of the Vakhsh River," Izv. Otd. Yestestv. Nauk AN Tadzh SSR, No 6, 129-135, 1954

The Vakhsh River valley from the confluence of the Surkhoba and Obikhingou rivers to the mouth of the Kyldera River possesses the characteristic beaded structure. In the Komsomolabadsk basin-shaped widening, one can distinguish ten terraces. The upper five terraces are complicated by coarse conglomerates and porose sands and possess a local development. The author does not agree with their treatment as "typical serration terraces" (K.K. Markov, Pamir, 1936). (RZhGeol, No 1, 1955)

SO: Sum. No. 536, 10 Jun 55

KUKHTIKOV, M. M.

15-1957-8-9177

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 54

AUTHOR: Kukhtikov, M. M.

TITLE: The So-called Geological Boundary Between Pamir and Alay-Tyan'-Shan' (O tak nazyvayemoy geologicheskoy granitse mezhdu Pamirom i Alayem-Tyan'-Shanem)

PERIODICAL: Uch. zap. Tadzh. un-t, 1955, vol 6, pp 5-12

ABSTRACT: The author agrees with V. M. Sinitsyn (Izv, AN SSSR, ser. geol., 1945, Nr 6), that the relations between Pamir and Alay-Tyan'-Shan' should not be explained as a whole, but for each tectonic stage individually. It is shown that the boundary between the regions has not remained stationary. In addition, inhomogeneous tectonic forms occur in the Alpine structure of

Card 1/2

The So-called Geological Boundary Between Pamir (Cont.)

Alay-Tyan'-Shan' and Pamir. Both systems are divided into a series of internal structures of the first order, bordered by "boundary" or "deep" fractures. According to the author, only these borders are subject to discussion.

A. I. Suvorov

Card 2/2

15-57-4-4447

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, p 59 (USSR)

AUTHORS: Baratov, R. B., Kukhtikov, M. M.

TITLE: The Geological and Petrographic Features of the Sina Intrusive /Southwestern Spurs of the Gissarskiy Khrebet (Range)/ /Geologo-petrograficheskaya kharakteristika intruziva Sina (Yugo-zapadnyye otrogi Gissarskogo khrebta)/

PERIODICAL: Izv. Otd. yestestv. nauk AN TadzhSSR, 1956, Vol 15, pp 3-8.

ABSTRACT: The Sina stock-like granite intrusive, covering an area of about 25 km^2, is exposed in the basin of the Sangardak River northwest of the village of Sina in the Denau district in the southwestern spurs of the Gissarskiy Range. The host rocks are metamorphic, presumably of Precambrian age, and clastic-tuffaceous, of Lower Carboniferous age. The granite is a medium-

Card 1/2

The Geological and Petrographic Features (Cont.)

grained, locally inequigranular, massive rock. The mineral content, in percent, is potassium feldspar 33, quartz 32, plagioclase 24, and muscovite and biotite 8. Near the contact with metamorphic schists the quantity of plagioclase, biotite, and muscovite increases. The potassium feldspar is orthoclase microperthite and the plagioclase is acid andesine. Muscovite formed at the expense of biotite, in many places replacing it completely. The granite is hypidiomorphic granular. Dikes of aplitic muscovite granite, granite porphyry, quartz porphyry, and lamprophyre (kersentite and odinite) occur in the granites and in the country rocks. South of the Sina intrusive, in the basin of the Bulungur River, a mass of hornblende-biotite granodiorite is exposed. It is similar to the Middle Carboniferous quartz diorites and granodiorites in the Barzob River basin (Baratov, Izv. Otd. estest. nauk Tadzh SSR, 1954, Vol 8).

Card 2/2 S. P. B.

15-1957-10-13800

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, pp 60-61 (USSR)

AUTHOR: Kukhtikov, M. M.

TITLE: The Zonal Structure and Some Questions on the Magmatic Geology of the Southern Slope of the Gissarskiy Range (Southern Tyan'-Shan') /Tektonicheskaya zonal'nost' i nekotoryye voprosy magmaticheskoy geologii yuzhnogo sklona Gissarskogo khrebta (Yuzhnyy Tyan'-Shan')/

PERIODICAL: Tr. AN TadzhSSR, 1955, vol 58, pp 49-62

ABSTRACT: Geotectonic zones are differentiated in the Hercynian structures on the southern slope of the Gissarskiy Range; these are based on stratigraphic types (nature of the facies, thickness of the deposits, and stratigraphic continuity or discontinuity of the section), time of folding, structural morphology, and nature of the magmatic activity and metamorphic processes. 1) The Surkhantauskaya zone has a three-staged character of pre-Alpine structures, including Precambrian metamorphic

Card 1/4

The Zonal Structure and Some Questions on the Magmatic Geology of the Southern Slope of the Gissarskiy Range

rocks, Lower Carboniferous clastic and volcanic formations, and an upper Paleozoic series of indistinctly bedded conglomerates. The phases of tectogenesis occurred in the Precambrian (?), at the end of the Lower Carboniferous, and at the end of the Paleozoic. 2) The Baysun-Kshtutskaya zone is distinguisned from the preceding by a thick sequence of Devonian marble, marmorized limestone, phyllite, and quartz-sericite schist. The structure is the result of three tectonic phases (at the end of the Devonian, at the end of the Lower Carboniferous, and at the end of the Paleozoic). 3) The Suzystauskaya zone, composed of Precambrian augen gneisses and Lower Carboniferous volcanic rocks, is characterized by Precambrian and Lower Carboniferous phases of folding. 4) The Karatag-Romitskaya zone is composed of Precambrian metamorphic rocks; Lower Carboniferous conglomerates, sandstones, and effusives; Middle Carboniferous volcanic rocks; Upper Carboniferous sandy shales, marls, sandstones, and conglomerates; Lower Permian acid lavas and tuffs, and Upper Permian redbeds of the Khanakinskaya series. The zone was formed

The Zonal Structure and Some Questions on the Magmatic Geology of the Southern Slope of the Gissarskiy Range

by four orogenic phases (pre-Lower Carboniferous, Upper Carboniferous, and two in the Permian. 5) The Osmantalinskaya zone is characterized by a stratigraphic column with two members a) strongly metamorphosed middle Paleozoic sequence and Lower Permian effusive quartz porphyries) and represents one phase of tectogenesis (middle Paleozoic). 6) The Central Gissarskaya zone includes a shale and limestone series of late Silurian age, all three divisions of the Devonian system (lower, limestone; middle, calcareous shale; upper, limestone), a Lower Carboniferous limestone sequence, upper Paleozoic arenaceous shales and sandstones, and Mesozoic deposits. The zone is the result of one intense phase of tectogenesis (appearing in the second half of the late Carboniferous). 7) The absence of Paleozoic rocks in the area of the Garm-Khaitskaya zone makes it difficult to determine the age of the structure. Intrusive activity accompanied the principal tectonic phases, giving rise to various granitic intrusive complexes. The current outline of the magmatism in the Gissarskiy Range is presented; according to this view all

15-1957-10-13800

The Zonal Structure and Some Questions on the Magmatic Geology of the Southern Slope of the Gissarskiy Range

the magmatic rocks belong to one upper Paleozoic cycle and are divided into two principal intrusive phases sharply contrasted in age (gray and red granites) and three volcanic phases. From the data gathered together in this paper, the author shows the possibility of outlining the principal features of the magmatic processes of the region in a different way from the scheme mentioned above. 1) In addition to Middle Carboniferous volcanic rocks, there are Lower Carboniferous and middle Paleozoic volcanics of the same composition. 2) The following sequence of intrusive formations seems to be the most plausible: a) Precambrian intrusives (the Aylyangarskiy intrusive complex of G. S. Chikryzov and part (?) of the granites of the Garm-Khaitskaya zone); b) middle Paleozoic intrusions of the Osmantalinskiy zone (northern Varzobskiy massif); c) Upper Carboniferous intrusions of the Karatag-Romitskaya and Central Gissarskaya zone (the Kharangon granodiorites, the porphyritic biotite-hornblende granites of the southern Varzobskiy massif, and others); and d) Permian intrusions in the Khodzha-Obi-Garmskaya bordering fault zone.

Card 4/4

A. D. Sokolov

BARATOV, R.B.; KUKHTIKOV, M.M.

On the age of the Sina intrusion (southwestern spurs of the Gissar Range). Dokl.AN SSSR 107 no.2:299-301 Mr '56. (MLRA 9:7)

1.Institut geologii Akademii nauk Tadzhikskoy SSR. Predstavleno akademikom N.M.Strakhovym.
(Gissar Range--Geology, Stratigraphic) (Sina Valley--Rocks, Igneous)

KUKHTIKOV, M.M.; SALTOVSKAYA, V.D.; CHERENKOV, I.N.

Stratigraphy of Paleozoic terrigenous deposits in the central part of the Zeravshanskiyand Gissar Ranges. Dokl. AN Tadzh. SSR no. 22:3-8 '57. (MIRA 11:7)

1. Institut geologii AN Tadzhikskoy SSR. Predstavleno akademikom AN Tadzhikskoy SSR A.P.Nedzvetskim.
(Zeravshanskiy Range--Geology, Stratigraphic)
(Gissar Range--Geology, Stratigraphic)

KUKHTIKOV, M.M.

Method for determining the age of a tectonic structure. Trudy AN Tadzh. SSR 77:25-46 '57. (MIRA 11:9)
(Geology, Structural) (Geological time)

KUKHTIKOV, M.M.; SALTOVSKAYA, V.D.; CHERENKOV, I.N.

New data on the geology and Carboniferous sediments of the southern slope of the Chumkar-Tau (western extremity of the Tunkestan Range). Trudy AN Tadzh.SSR 104 no.1:95-100 '59. (MIRA 15:4)

1. Institut geologii AN Tadzhikskoy SSR.
(Turkestan Range--Geology)

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5.1190

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3

S/180/60/000/02/025/028
E071/E135

AUTHORS: Katsobashvili, Ya.R., Kuz'mina, T.N., Kurkova, N.S., Kukhticheva, V.F., Levitskiy, E.A., Likhobabenko, V.S., and Masolova, F.A. (Moscow)

TITLE: Mechanically Strong Aluminonickel Catalyst for the Process of Destructive Hydrogenation

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 2, pp 159-164 (USSR)

ABSTRACT: The process of destructive hydrogenation of crudes and residues under a moderate pressure in a circulating stream of a catalyst developed by the Petroleum Institute of the Academy of Sciences USSR (Ref 1) requires the application of catalysts which are resistant to wear. An investigation of the influence of conditions of preparation of aluminonickel catalysts, containing 10% of nickel oxide, on their mechanical strength is described in the present paper. The experiments were carried out on a small and pilot plant scale. The precipitation of mixed and separate aluminium and nickel hydroxides from 2N solutions of nitrates or sulphates was done with sodium hydroxide, controlling the pH of the medium, temperature

Card 1/3

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E071/E135

Mechanically Strong Aluminonickel Catalyst for the Process of Destructive Hydrogenation

of precipitation, ageing time of the precipitated hydroxides and, in the case of separate precipitation from sulphate salts, the amount of wash water on the residual content of sulphate ion. The experimental results obtained are given in tables: Table 1 gives the influence of pH of the medium during precipitation on the strength of the catalyst (experimental conditions: precipitation temperature 20 °C; ageing temperature 20 °C; washing with ammoniacal water at room temperature); Table 2 gives the influence of pH of the medium during precipitation on the strength of the catalyst (experimental conditions: duration of ageing 45 hours, pH during precipitation 9.6); Table 3 gives the influence of ageing on the mechanical strength of the catalyst (pH at the end of precipitation 9.6, precipitation and ageing at room temperature); Table 4 gives the influence of chemical composition on the content of sulphate ions in aluminonickel catalysts; Table 5 gives the properties of aluminonickel catalysts prepared by the method of separate

Card 2/3

69662
S/180/60/000/02/025/028
E071/E135

Mechanically Strong Aluminonickel Catalyst for the Process of Destructive Hydrogenation

precipitation. The activity of the catalysts prepared was tested under standard conditions of destructive hydrogenation at a moderate pressure (Ref 1) of sulphurous Tuymazin crude oil and compared with that of an industrial aluminomolybdenum catalyst. The experimental results are given in Table 6. It was found that in respect of their activity aluminonickel catalysts are not inferior to industrial aluminomolybdenum catalyst Nr 7360: the yield of liquid products amounted to 87-90%, the yield of coke to 2.7-3.8% and the degree of desulphurization to 76-88%. It is concluded that aluminonickel catalyst prepared under optimum conditions possesses satisfactory mechanical properties and activity for the process of destructive hydrogenation under a moderate pressure (30 atm).

Card 3/3

There are 6 tables and 7 references, of which 5 are Soviet, 1 is English and 1 is German.

KUKHTIKOV, M.M.; CHEBENKOV, I.N.

"Cambrian" sediments of the northern slope of the Turkestan Range. Dokl. AN Tadzh. SSR 3 no.1:3-6 '60. (MIRA 13:12)

1. Institut geologii Akademii nauk Tadzhikskoy SSR. Predstavleno chlenom-korrespondentom AN Tadzhikskoy SSR R.B.Baratovym.
(Turkestan Range--Geology, Stratigraphic)

KUKHTIKOV, M.M.

Methods for compiling stratigraphic maps of fold areas. Report No.1:99-112 '61. (MIRA 15:12)

1. Institut geologii AN Tadzhikskoy SSR.
(Geology, Structural—Maps)

ZAKHAROV, S.A., red.; KUKHTIKOV, M.M., red.; GELLER, S.P., tekhn. red.

[Abstracts of reports of the Second All-Union Conference on Tectonics] Tezisy dokladov Vsesoiuznogo tektonicheskogo soveshchaniia. Red. S.A.Zakharov, M.M.Kukhtikov. Dushanbe, AN Tadzhik.SSR, 1962. 113 p. (MIRA 17:4)

1. Vsesoyuznoye tektonicheskoye soveshchaniye, 2d, Dushanbe.

KUKHTIKOV, M.M.

History of the geological development of the Zeravshan basin. Trudy Inst.geol.AN Tadzh.SSR 5:73-96 '62. (MIRA 16:1)
(Zeravshan Valley--Geology)

KUKHTIKOV, M.M.

Tectonic zones of the Gissar-Alay Paleozoic fold area in the Dushanbe-Shakhristan intersection. Trudy Inst. geol. AN Tadzh. SSR 7:191-237 '63. (MIRA 17:6)

KUKHTIKOV, M.M.

Tectonic regionalization of the Pamirs in the Alpine stage.
Uch. zap. Tadzh. un. 17. Trud. fak. est. nauk no.[illegible] 1958
(MIRA 12:4)

BARKHATOV, B.; VLASOV, N.G.; ZAKHAROV, S.A.; KUKHTIKOV, M.M.

[Excursion guide of the second All-Union Tectonics Society] Putevoditel' ekskursii. Dushanbe, In-t geologii AN Tadzhik.SSR, 1962. 98 p. (MIRA 17:7)

1. Vsesoyuznoye tektonicheskoye soveshchaniye, 2d, Dushanbe.

BARATOV, R.B., otv. red.; KUKHTIKOV, M.M., zam. otv. red.; BABAKHODZHAYEV, S.M., red.; BABKOV, K.V., red.; DZHALILOV, M.R., red.; ZAKHAROV, S.A., red.; NOVIKOVA, T.I., red.; PANKRATOV, P.A., red.; REYMAN, V.M., red.

[Problems of the geology of Tajikistan; festschrift for the 23d Session of the Geological Congress in Delhi] Problemy geologii Tadzhikistana; sbornik, posviashchennyi XXII sessii Mezhdunarodnogo geologicheskogo kongressa v Deli. Dushanbe, AN Tadzhik SSR, 1964. 290 p. (MIRA 18:3)

1. Akademiya nauk Tadzhikskoy SSR, Dushanbe. Institut geologii.

KUKHTIKOVA, T. I.

KUKHTIKOVA, T. I.--"A Study of Dislocations in the Foci of Garm Oblast Based on Data from the Regional Network of Central Asia from 1952-1954." Acad Sci USSR. Geophysics Inst. Moscow, 1955. (Dissertation for the Degree of Candidate of Physicomathematical Sciences).

SO: Knizhnaya Letopis' No. 27, 2 July 1955

КАХНИКОВА, Т.І.

GOTSADZE, O.D.; KIRILLOVA, I.V.; KOGAN, S.D.; KUKHTIKOVA, T.I.; MALINOVSKAYA, L.N.; SORSKIY, A.A.; KEYLIS-BOROK, V.I., doktor fiziko-matematicheskikh nauk, otvetstvennyy redaktor; ZAYTSEV, L.P., redaktor izdatel'stva; EZ, V.V., redaktor izdatel'stva; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Investigation of the mechanism of earthquakes] Issledovanie mekhanizma zemletriasenii. Moskva, Izd-vo Akademii nauk SSSR, 1957. 148 p. (Akademiia nauk SSSR. Geofizicheskii institut. Trudy, no.40). (MIRA 10:10)

(Seismology)

KUKHTIKOVA, T.I.; GAYSKIY, V.N.; BUNE, V.I.

Seismic activity in Tajikistan in 1955 [with summary in English].
Trudy Inst.seism. AN Tadzh.SSR 71:3-19 '57. (MIRA 11:11)
(Tajikistan--Earthquakes)

KUKHTIKOVA, T.I.

Correlation of seismic and geological data [with summary in English]
Trudy Inst.seism. AN Tadzh.SSR 71:21-28 '57. (MIRA 11:11)
(Garm District--Geology, Structural) (Seismology)

S/169/61/000/009/013/056
D228/D304

AUTHORS: Kukhtikova, T. I., and Barinova, A. Ya.

TITLE: Mechanism of focal movements during the Shurobsk earthquake and its recurrent shocks

PERIODICAL: Referativnyy zhurnal. Geofizika, no. 9, 1961, 16, abstract 9A133 (Tr. In-ta seysmostoyk. str-va i seysmol. AN TadzhSSR, v. 7, 1960, 97-102)

TEXT: The mechanism of the Shurobsk earthquake (0042 hr. on July 21, 1955, $E = 10^{12}$ j, $\varphi = 38^{\circ}56'$ N, $\lambda = 69^{\circ}40'$ E, $H = 20$ km) and its recurrent shocks is determined by the Keylis-Borok method. The following conclusions are drawn from comparing the results for the main tremor and the 12 strongest recurrent shocks: (1) The mechanism of the focal movement of the recurrent shocks repeats the basic features of the mechanism of the strong earthquake. (2) The dislocations found for the trend of the rupture planes differ within the limits of 20°. (3) At the foci,

Card 1/2

Mechanism of focal...

the rupture surfaces are steeply inclined (39 - 58°) to the horizontal. (4) The relative rupture displacement at the 12 foci is associated with the uplift of the eastern block and with the subsidence of the northwestern block. (5) Most of the dislocations at the Shurobsk foci are regarded as combinations of overthrusts and faults (in the geologic sense). (6) Despite the similarity of the movement mechanism of the foci under consideration, the first arrivals of longitudinal waves at certain stations have different directions; this is due to the small slewing of the planes or direction of the movements. [Abstracter's note: Complete translation.]

Card 2/2

KUKHTIKOVA, T.I.

Mechanism of earthquakes of the Tajik Depression. Trudy Inst.seism.stroi. i seism 10:17-47 '62. (MIRA 16:5)

(Tajik Depression--Earthquakes)

KUKHTIKOVA, T.I.; FRANTSUZOVA, V.I.; YEFERINA, G.P.; ABRAMOVICH, I.B.; PAVLOVA, G.I.

Prevailing periods of surface waves. Dokl. AN Tadzh. SSR 6 no.3:17-21 '63. (MIRA 17:4)

1. Institut seysmostoykogo stroitel'stva i seysmologii AN Tadzhikskoy SSR. Predstavleno chlenom-korrespondentom AN Tadzhikskoy SSR R.B.Baratovym.

EWT(l)/EWA(h) Pab GW UR/0169/65/000/004/G017/G017

ACCESSION NR: AR5013959 550.341

AUTHOR: Kukhtikova, T.I.; Frantsuzova, V.I.

TITLE: Correspondence between predominant periods and surface-wave spectra

SOURCE: Ref. zh. Geofizika, Abs. 4G97

CITED SOURCE: Tr. In-t seysmostoyk. str-va i seysmol. AN TadzhSSR, v. 12, 1964, 84-96

TOPIC TAGS: seismic wave, surface wave, predominant period, seismic wave spectrum, surface wave spectrum

ABSTRACT: Visually determined approximate characteristics of surface waves were compared with their true spectra. Observations made by Kulyab and Khorog seismic stations for epicentral distances ranging from 1,200 to [illegible] km were used. Equipment distortions in the determination of true spectra were eliminated. Complex spectra were smoothed. Visually determined spectral characteristics of the true spectra maxima are only approximate and do not reflect their peculiarities. The [illegible] spectra of surface waves are narrower and are situated in the region

Card 1/2

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ACCESSION NR: AR5013959

of the principal maximum of the true spectrum, closer to its short-period section. The long-period constituents, not recorded visually, are well represented in the true spectra. As determined by seismograms, the predominant periods and the periods of maximum amplitudes lie in the vicinity of principal maximum of the spectra. However, sometimes it is the maximum-amplitude periods, and sometimes the predominant periods, which are closest to the maximum. L. Balakina

SUB CODE: ES

ENCL: 00

EWA(1) EWT(1) Peb GW

ACCESSION NR: AR5008607 S/0169/65/000/001/G015/G016

Ref. zh. Geofizika, Abs. 1G73

[illegible] I. I. [illegible] V. I.

SOURCE: Tr. In-t seysmostoyk. str-va i seysmol. [illegible] 1964, 193-195

TOPIC TAGS: seismology, seismograph

TRANSLATION: Some shortcomings in the determination of the parameters of the seismic apparatus of the network of seismic stations are noted. There was found to be a wide diversity in the parameters for the stations of Central Asia. The bulletins giving seismograph parameters nowhere indicate the accuracy of their determination. [illegible] examples of the SK and EGIK seismograph [illegible] knowledge of the accuracy of determination of the parameters plays an important role in [illegible] of their dynamic characteristics. For example, a 10% error in determination of the parameters can cause an error in the determination of magnitude up to 30%. The "Byulleten' seysmicheskoy sti SSR" contains some data

ACCESSION NR: AR5008607

on the parameters of seismic apparatus. These data are given in a form quite unsuitable for computation of the dynamic characteristics in a broad range of frequencies. It is extremely irrational for the computation of the characteristics to be left to each interpreter. It is proposed that apparatus data be published in the form of detailed tables. Such work already has been done for 14 stations of the general type in Central Asia for the period 1955-1959 and for the expeditionary stations of Tadzhikistan for 1955-1962. Computed data are presented in tables. A. Rykov

SUB CODE: ES ENCL: 00

DONSKOY, Al.V., doktor tekhn. nauk, prof.; DONSKOY, An.V.; DRESVIN, S.V.; IVENSKIY, G.V.; KUKHTIN, A.M.; LEYBIN, Yu.V.; MONDRUS, D.B.; SOLOMAKHIN, I.M.; FRUMKIN, A.A.; BALASHOV, V.A., retsenzent

[High-frequency electrothermy; a handbook] Vysokochastotnaia elektrotermiia; spravochnik. Moskva, Mashinostroenie, 1965. 564 p. (MIRA 18:6)

BORONENKOV, V.N.; YESIN, O.A.; SHURYGIN, P.M.; KUKHTIN, B.A.

Polarization curve method of studying the kinetics of the direct reduction of iron from fused oxides. Elektrokhimiia 1 no.10:1245-1252 O '65. (MIRA 18:10)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

1. KUKHTIN, D. V.

2. USSR (600)

4. Limekilns

7. Signal apparatus to indicate charge in the lime kiln. Sakh. prom, 26 no. 10, '52.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

KUKHTIN, F.P.

3523. KUKHTIN, F.P. Polgoda Raboty Na Tselinnoy Zemle. (Rasskaz Dir. Ordzhonikidzevskogo Lernosovkhoza Kustanayskoy obl. Kazakh. SSR...) (Lit. Zapis' I. Ya. Ivanova-Rechnogo i A.B. Meshchankinoy). M., Izd-vo M-VA Sovkhozov SSSR. 1954. 11s 20sm (M-Vo Sovkhozov SSSR. Glav. upr. s.-kh. Propagandy. Osvoenie Tselinnykh i Zalezhnykh.Zemel'-Vsenarodnoye Delo). 15,000ekz. Bespl.-Na obl. avt. Ne Ukazan.-(54-57202* P. 338.1 Sov: 633.1+631.61) (584.63)

SO: Knizhnaya Letopis', Vol. 3, 1955

1. KUKHTIN, I. N.

2. USSR (600)

4. Yelat'ma Region - Borings

7. Report on the results of the exploration in the Yelat'ma area (1944). [Abstract.] Izv.Glav.upr.geol.fon., no. 2, 1947.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

KUKUTIN, I.N., Doc Geol-Min Sci -- (diss) "Certain problems in the formation of petroleum and gas segregations in the Soviet part of the Eastern Carpathians and Pre-Carpathians." L'vov, 1959, 38 pp with diagrams (Min of Higher Education UkSSR. L'vov Polytechnical Inst) 150 copies (KL, 28-59, 124)

KUKHTIN, I.N.

Time of the formation of oil and gas pools in the eastern Carpathian oil- and gas-bearing province. Geol.neft i gaza 6 no.10:38-41 O '62. (MIRA 15:12)

1. L'vovskiy politekhnicheskiy institut.
(Carpathian Mountains--Petroleum geology)
(Carpathian Mountains--Gas, Natural--Geology)

S/058/63/000/003/040/104
A062/A101

AUTHORS: Khaykin, M. S., Derstuganov, G. V., Levkoyev, I. I., Kukhtin, V. A., Shamil'skaya, D. B.

TITLE: On the developing properties of some 4-aminopyrazolones (5) and their derivatives. Report II

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 82, abstract 3D560 ("Tr. Vses. n.-i. kinofotoin-ta", 1962, no. 46, 5 - 16)

TEXT: A synthesis was made of some 1-phenyl and 1-sulphophenyl-3-carbmethoxy- and 3-carbalcoxymethyl-4-aminopyrazolones (5). The developing properties of these compounds were investigated. It is shown that the conservation of weakly alkaline developing solutions, containing 4-aminopyrazolones, depends to a large extent on the electron character of the substitutes in the 1st and 3rd positions of these compounds. It is made clear that the introduction of electronegative substitutes into the 1st and 3rd position of 4-aminopyrazolones reduces the stability of the developing solutions of these compounds with respect to the ions of bromine. For report I see RZhFiz, 1962, 10287.
[Abstracter's note: Complete translation]

Card 1/1

S/058/63/000/003/042/104
A062/A101

AUTHORS: Akhmedzyanov, M. A., Slesareva, V. I., Khaykin, M. S., Kukhtin, V. A., Borin, A. V.

TITLE: About the influence of some antioxidizers on the photographic properties and conservation of emulsion layers

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 84, abstract 3D575 ("Tr. Vses. n.-i. kinofotoin-ta", 1962, no. 46, 31 - 35)

TEXT: A study was made on the influence of some derivatives of polyphenols and hydrasine on the photographic properties and conservation of sensitized emulsion layers. It was found that phenylhydrazone of glucose and phenylglucosazone contribute to improve the conservability of sensitized light-sensitive layers. There are 12 references.

[Abstracter's note: Complete translation]

Card 1/1

ACCESSION NR: AP4041648 S/0020/64/158/001/0157/0158

AUTHOR: Kukhtin, V. A ; Gozman, I. P.

TITLE: Reaction of esteramides and acid chloride esters of phosphorous acid with diacetyl

SOURCE: AN SSSR. Doklady, v. 158, no. 1, 1964. 157-158

TOPIC TAGS: ester, phosphorus acid, diacetyl, conjugate bond system, phosphorus compound

Abstract: It was shown earlier that trialkylphosphites combine with diacetyl to form compounds of pentacovalent phosphorous. Continuing the study of the reactions of esters of trivalent phosphorus acids with conjugated systems, the authors studied reactions of deacetyl with certain esteroamides of phosphorus acid and with diethylchlorophosphite. It was found that esteroamides of phosphorus acid react with diacetyl to form chiefly 1, 3, 2-oxaphospholenes. Orig. art. has 1 table and 3 diagrams.

Card 1/2

L 16079-65
ACCESSION NR: AP5001948

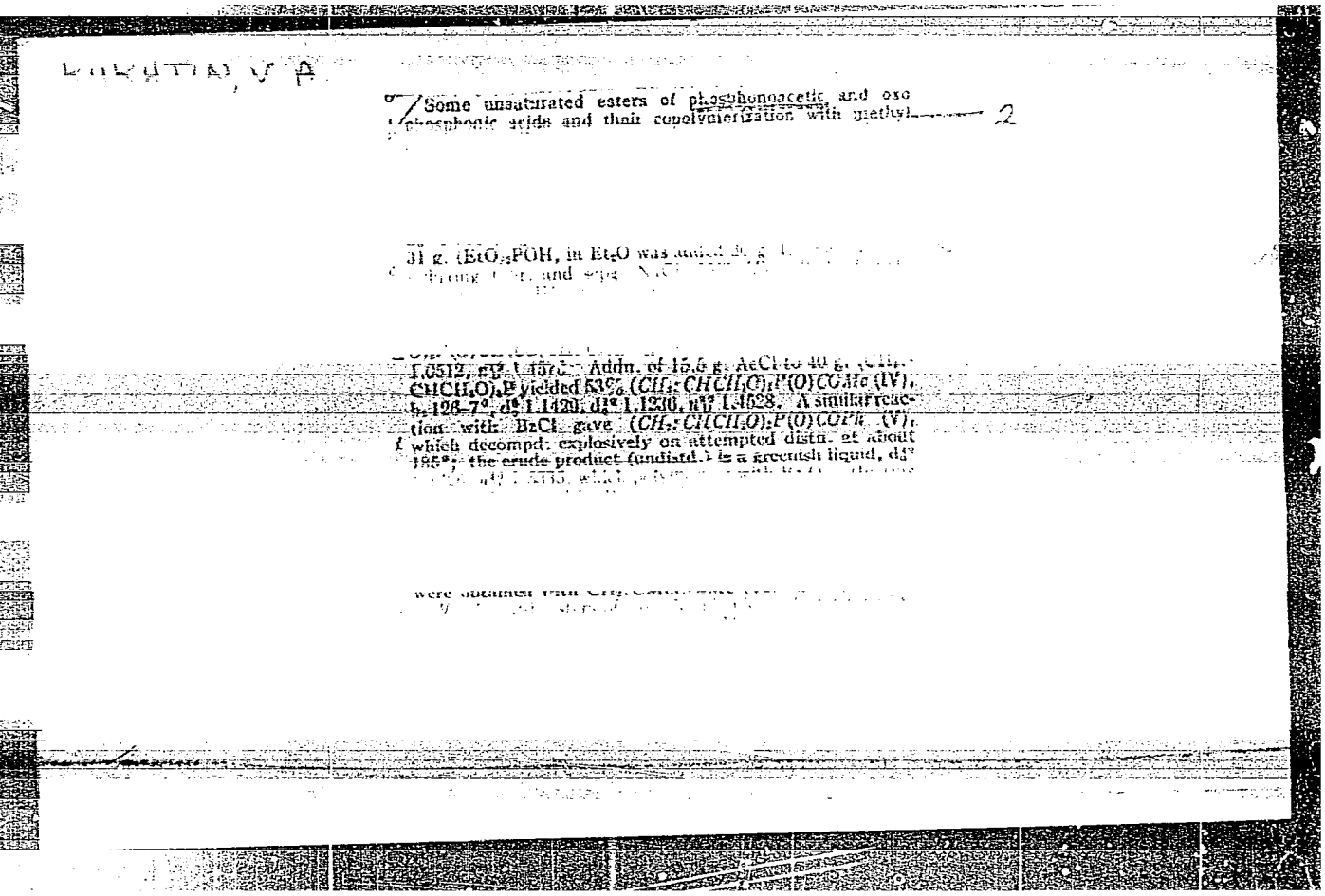
ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR, Kazan' (Institute of Organic Chemistry of the Academy of Sciences, SSSR)

SUBMITTED: 13Mar64	ENCL: 00	SUB CODE: OC, GC
NO REF SOV: 002	OTHER: 001	JPRS

Card 2/2

RAZUMOV, A.I.; KUKHTIN, V., student; SAZONOVA, N.

Reactions of certain phosphorus halogen compounds with esters of glycolic acid. Trudy KKHTI no.15:7-14 '50. (MIRA 12:12)
[pub. '51]
(Phosphorus compounds) (Glycolic acid)



Some unsaturated esters of phosphonoacetic and oxophosphonic acids and their copolymerization with methyl

31 g. $(EtO)_2POH$, in Et_2O was

$CHClH_2O)_2P$ yielded 53% $(CH_2:CHClH_2O)_2P(O)CO_2Me$ (IV), b. 126–7°, d_4^{25} 1.1420, d_4^{20} 1.1230, n_D^{20} 1.4528. A similar reaction with $BzCl$ gave $(CH_2:CHClH_2O)_2P(O)COPh$ (V), which decompd. explosively on attempted distn. at about 185°; the crude product (undistd.) is a greenish liquid, d_4^{20}

were obtained with

USSR/Chemistry - Organo-Phosphorus Compounds Jun 52

"The Reaction Between Some Phosphorus Halides and Esters of Glycolic Acid," A. Razumov, V. Kukhtin, N. Sazonova, Org Chem Lab, Kazan' Chem-Technol Inst

"Zhur Obshch Khim" Vol XXII, No 6, pp 920-926

Studied the reaction of esters of glycolic acid with PCl_3, ethoxydichlorophosphine and dipropoxychlorophosphine. With PCl_3, instead of the normal phosphite with trivalent phosphorus p $P(OCH_2COOC_2H_5)_3$, its isomer with pentavalent P is obtained. Explains this phenomenon. Gives 2 methods for

218T15

Card 1 of 2

USSR/Chemistry - Organo-Phosphorus Compounds (Contd 1) Jun 52

synthesis of dipropyl-(carbopropoxy-methyl) phosphorus ester. The latter is partially regrouped into a compd with pentavalent P. Regrouping of this compd was also carried out by means of the ester of chloroacetic acid, and the process (an Arenzov rearrangement) was used for the synthesis of the compd $ROCOCH_2-\underset{\underset{OR}{|}}{\overset{\overset{O}{||}}{P}}-OCH_2COOR$. This synthesis shows the structure of the ester which was obtained as a secondary product in the synthesis of dipropyl carbopropoxy methyl phosphorous ester.

218T15

KUKHTIN, V.

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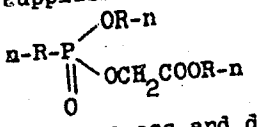
USSR/Chemistry - Organo-Phosphorus Compounds (Contd 2) Jun 52

In addn to the above product, the regrouping process also supplies a second product,



(R-n = n-C_3H_7).

Explains this process and determines the structure of the product. A synthesis of 7 compds of a new type, not previously described in literature, was carried out.

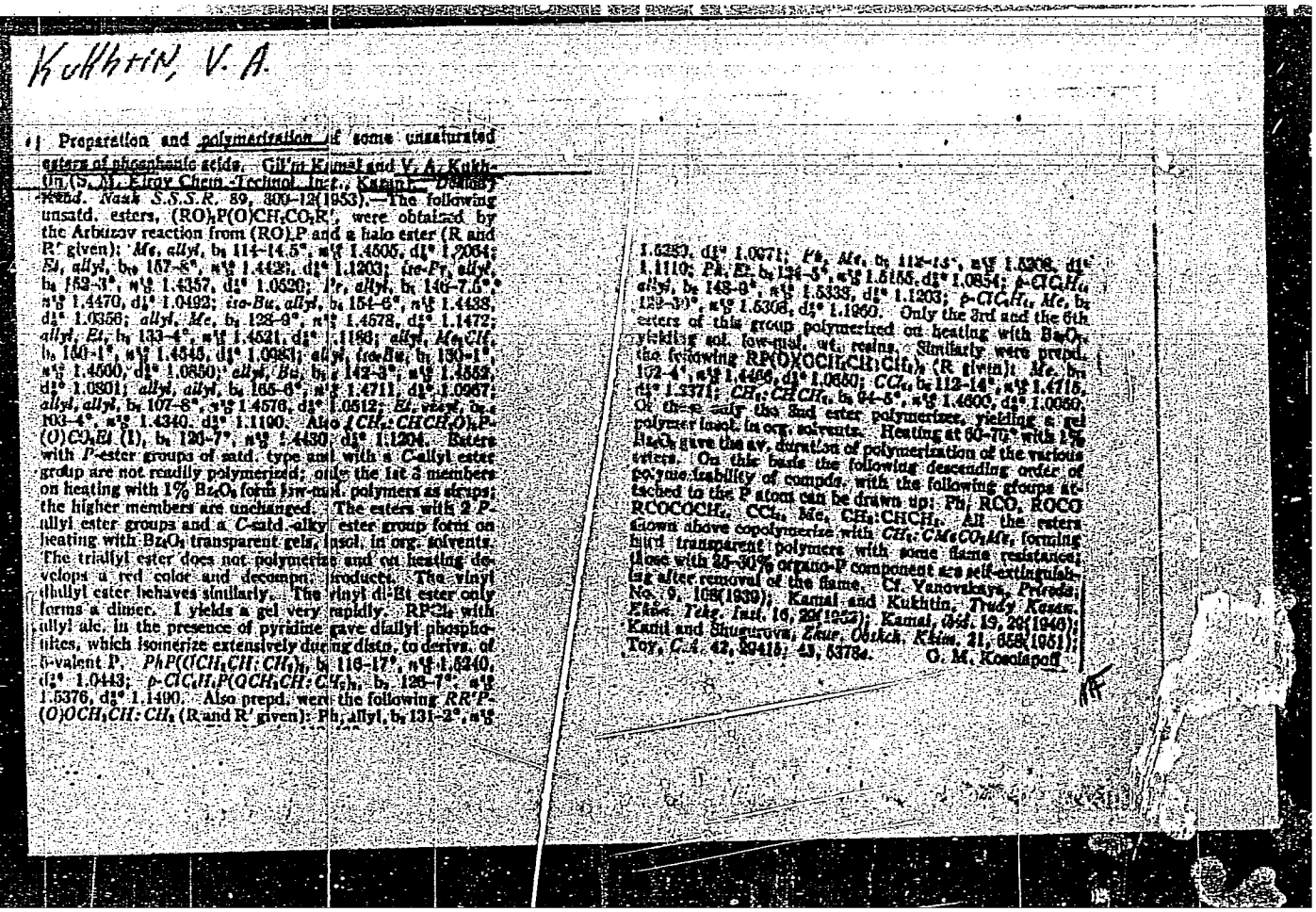
218T15

KUKHTIN, V. A.

Dissertation: "Research Into the Field of the Preparation of Unsaturated Esters of Phosphoric Acids and Their Polymerization." Cand Chem Sci, Kazan' Chemico-Technological Inst, Kazan' 1953.

W-30928

SO: Referativnyy Zhurnal, No. 5, Dec 1953, Moscow, AN USSR (XXXXXX)

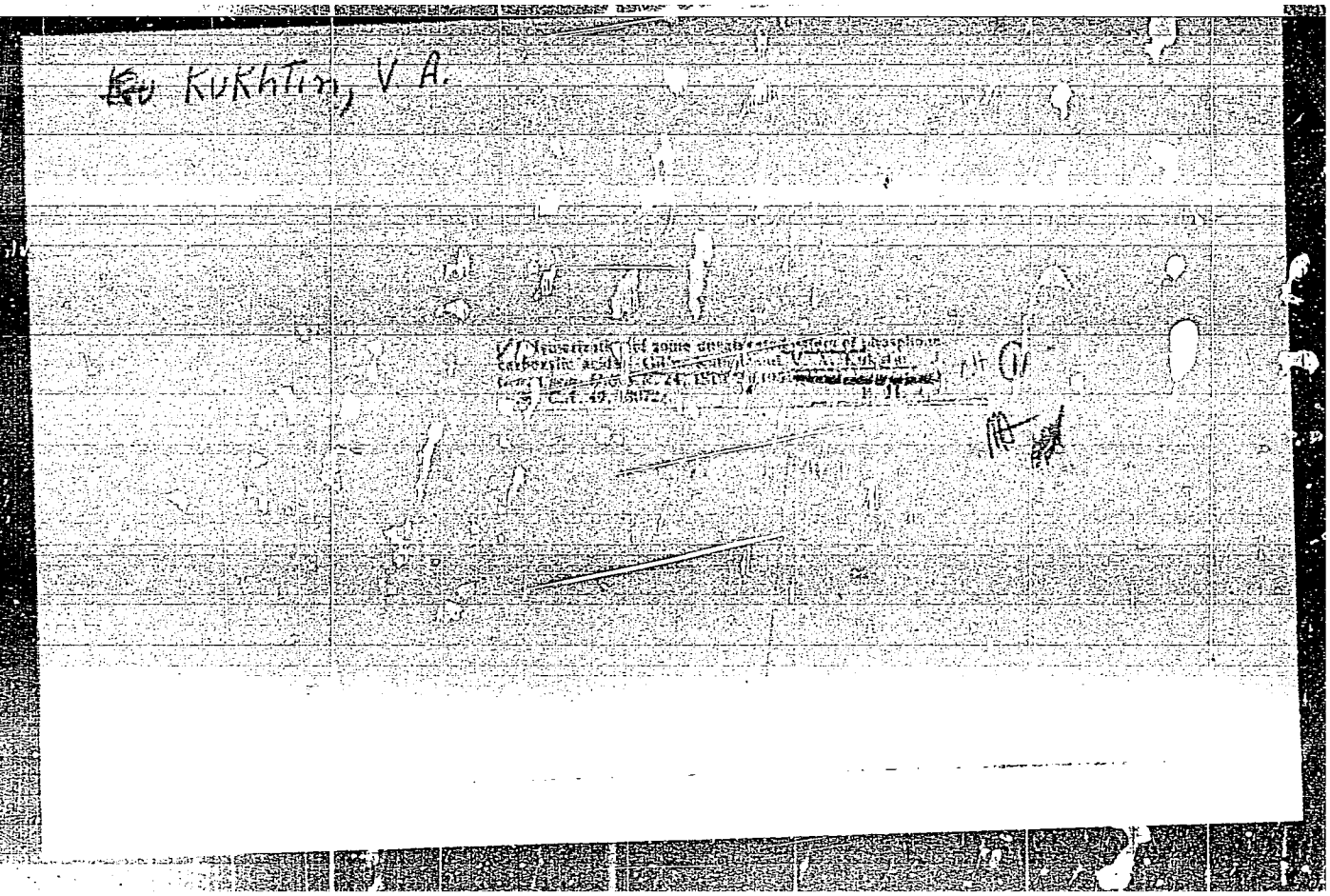


Kukhtin, V. A.

41 Preparation and polymerization of some unsaturated esters of phosphonic acids. Gil'm Kamai and V. A. Kukhtin (S. M. Kirov Chem.-Technol. Inst., Kazan'). *Doklady Akad. Nauk S.S.S.R.* 89, 309–12(1953).—The following unsatd. esters, $(RO)_2P(O)CH_2CO_2R'$, were obtained by the Arbuzov reaction from $(RO)_3P$ and a halo ester (R and R' given): *Me, allyl*, b_4 114–14.5°, $n^{20}D$ 1.4505, d_4^{20} 1.2064; *Et, allyl*, b_9 167–8°, $n^{20}D$ 1.4428, d_4^{20} 1.1203; *iso-Pr, allyl*, b_4 153–4°, $n^{20}D$ 1.4357, d_4^{20} 1.0520; *i-Pr, allyl*, b_1 146–7.5°, $n^{20}D$ 1.4470, d_4^{20} 1.0492; *iso-Bu, allyl*, b_4 154–6°, $n^{20}D$ 1.4438, d_4^{20} 1.0356; *allyl, Me*, b_4 128–9°, $n^{20}D$ 1.4572, d_4^{20} 1.1472; *allyl, Et*, b_4 133–4°, $n^{20}D$ 1.4521, d_4^{20} 1.1193; *allyl, MeCH*, b_4 140–1°, $n^{20}D$ 1.4545, d_4^{20} 1.0983; *allyl, iso-Bu*, b_4 150–1°, $n^{20}D$ 1.4500, d_4^{20} 1.0850; *allyl, Bu*, b_4 142–3°, $n^{20}D$ 1.4552, d_4^{20} 1.0801; *allyl, allyl*, b_4 165–6°, $n^{20}D$ 1.4711, d_4^{20} 1.0967; *allyl, allyl*, b_4 107–8°, $n^{20}D$ 1.4576, d_4^{20} 1.0512; *Et, vinyl*, $b_{4.5}$ 103–4°, $n^{20}D$ 1.4340, d_4^{20} 1.1190. Also $(CH_2:CHCH_2O)_2P(O)CO_2Et$ (I), b_4 120–7°, $n^{20}D$ 1.4430, d_4^{20} 1.1204. Esters with *P*-ester groups of satd. type and with a *C*-allyl ester group are not readily polymerized; only the 1st 3 members on heating with 1% B_2O_3 form low-mol. polymers as drops; the higher members are unchanged. The esters with 2 *P*-allyl ester groups and a *C*-satd.-alkyl ester group form on heating with B_2O_3 transparent gels, insol. in org. solvents. The triallyl ester does not polymerize and on heating develops a red color and decomps. products. The vinyl diallyl ester behaves similarly. The vinyl di-Et ester only forms a dimer. I yields a gel very rapidly. $RPCl_2$ with allyl alc. in the presence of pyridine gave diallyl phosphonites, which isomerize extensively during distn. to derivs. of 5-valent P. $PhP(OCH_2CH:CH_2)_2$, b_1 116–17°, $n^{20}D$ 1.5240, d_4^{20} 1.0443; *p*-$ClC_6H_4P(OCH_2CH:CH_2)_2$, b_1 120–7°, $n^{20}D$ 1.5376, d_4^{20} 1.1490. Also prepd. were the following *RR'P(O)OCH₂CH:CH₂* (R and R' given): Ph, allyl, b_4 131–2°, $n^{20}D$ 1.5283, d_4^{20} 1.0671; *Ph, Me*, b_4 112–13°, $n^{20}D$ 1.5308, d_4^{20} 1.1110; *Ph, Et*, b_4 124–5°, $n^{20}D$ 1.5185, d_4^{20} 1.0854; *p*-ClC_6H_4, allyl, b_4 148–9°, $n^{20}D$ 1.5333, d_4^{20} 1.1203; *p*-ClC_6H_4, *Me*, b_3 129–30°, $n^{20}D$ 1.5306, d_4^{20} 1.1960. Only the 3rd and the 6th esters of this group polymerized on heating with B_2O_3, yielding sol. low-mol. wt. resins. Similarly were prepd. the following $RP(O)OCH_2CH:CH_2$ (R given): *Me*, b_4 102–4°, $n^{20}D$ 1.4498, d_4^{20} 1.0680; CCl_4, b_4 112–14°, $n^{20}D$ 1.4715, d_4^{20} 1.3371; $CH_2:CHCH_2$, b_4 94–5°, $n^{20}D$ 1.4600, d_4^{20} 1.0060. Of these only the 2nd ester polymerizes, yielding a gel polymer insol. in org. solvents. Heating at 60–70° with 1% H_2O_2 gave the av. duration of polymerization of the various esters. On this basis the following descending order of polymerizability of compds. with the following groups attached to the P atom can be drawn up: Ph, RCO, ROCO, $RCOCOCH_2$, CCl_3, Me, $CH_2:CHCH_2$. All the esters shown above copolymerize with $CH_2:CMeCO_2Me$, forming hard transparent polymers with some flame resistance; those with 25–30% organo-P component are self-extinguishing after removal of the flame. Cf. Yanovskaya, *Priroda*, No. 9, 108(1939); Kamai and Kukhtin, *Trudy Kazan. Khim. Tekh. Inst.* 16, 39(1952); Kamai, *ibid.* 19, 28(1940); Kamai and Shugurova, *Zhur. Obshch. Khim.* 21, 858(1951); Toy, *C.A.* 42, 8041b; 43, 6378d. G. M. Kosolapoff

KUKHTIN, V. A.

Reaction of neutral and acid esters of phosphorous acid with esters of halogen-substituted aliphatic acids. Gil'm Kamai and V. A. Kukhtin (S. M. Kirov Chem.-Technol. Inst., Kazan). *Doklady Akad. Nauk S.S.S.R.* 91, 837-0 (1953). $(MeO)_3P$ with $MeO_2CCHClCH_2Cl$ yields mainly $(MeO)_2P(O)CH(CH_2Cl)CO_2Me$, b_4 100-8°, d_4^{20} 1.2691, n_D^{20} 1.4555; similarly, $(EtO)_3P$ at 110-20° yields mainly $(EtO)_2P(O)CH(CH_2Cl)CO_2Me$, b_4 131-2°, d_0^{0} 1.1882, d_4^{20} 1.1673, n_D^{20} 1.4400, along with some $(EtO)_2P(O)CH(CO_2Me)CH_2P(O)(OEt)_2$ (I). $MeO_2CCHClCH_2Cl$ with $(EtO)_2PONa$ gave exclusively I, b_4 162-3°, d_0^{0} 1.1970, d_4^{20} 1.1800, n_D^{20} 1.4474. The above described reaction with $(EtO)_3P$ at 140-70° is rather complex: the phosphite dehydrochlorinates the carboxylic esters and the resulting $CH_2:CClCO_2Me$ polymerizes in situ; EtCl is also evolved with formation of [illegible] $_2$POH. The reaction of (iso-PrO)$_3$P is similar. A [illegible] study of this reaction showed that the amt. of (RO) [illegible] H formed is considerably smaller than the theoretical, [illegible] amt. of evolved RCl is considerably greater. The [illegible] of this fact lies in that at elevated temp. (EtO) [illegible] the [illegible] esters also [illegible] route, yielding the polymeric chloro- [illegible] P [illegible] (OH)H with evolution of EtCl. Such [illegible] $(EtO)_2POH$ was also tested by heating the [illegible] CH_2Br to 150°, when EtBr was evolved and [illegible] liquid residue was formed. The latter on hydrolysis gave $HO_2CCH_2PO_3H_2$. Of the various possible [illegible] the most probable is: $(EtO)_2POH$ + [illegible] $(EtO)_2P(OH)(CH_2CO_2Et)Br$ → EtBr + [illegible], with the original phosphite reacting in the [illegible] form. The same reaction was tried with [illegible] $H_2CO_2CH_2CH:CH_2$; the latter ester was recovered unchanged, which was held as a proof of the above scheme since a reaction scheme: $(EtO)_2P(O)H$ + $BrCH_2CO_2Et$ → $(EtO)_2P(O)CH_2CO_2Et$ + HBr → EtBr + $(EtO)P(O)(OH)CH_2CO_2Et$, should have resulted in some reaction of the allyl ester with HBr. The result is held to be a confirmation of the enol-keto equil. in dialkyl phosphites, the factors of elevated temp. and the solvent Et [illegible] monoacetate being responsible for the shift toward the [illegible] form. [illegible] Kazan [illegible]



KUKHTIN, V. A.

USSR/Chemistry - Polymerization

Card 1/1 Pub. 151 - 29/37

Authors : Gil'm Kamay., and Kukhtin, V. A.

Title : Polymerization of certain unsaturated phosphonium carboxylic acid esters

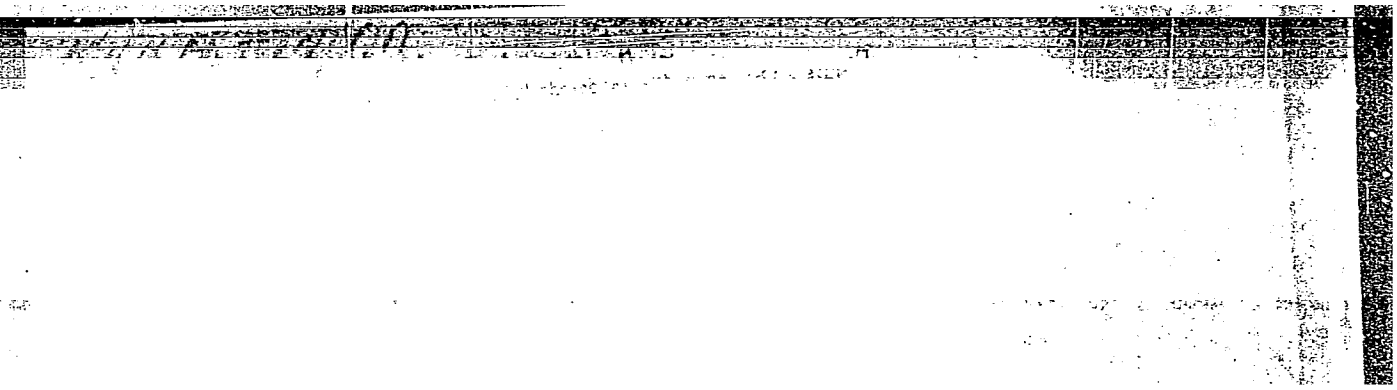
Periodical : Zhur. ob. khim. 24/10, 1855-1860, Oct 1954

Abstract : The synthesis of new unsaturated phosphonium carboxylic acid esters and results of studying their polymerizability, are described. The derivation of copolymers of unsaturated phosphonium carboxylic acid esters, combined with methyl methacrylate and their properties, are discussed. The process of polymerization of these esters is explained. Three references: 2-USSR and 1-German (1914-1953). Tables.

Institution : The S. M. Kirov Institute of Chemical Technology, Kazan

Submitted : May 15, 1954

Translation B-83649, 21 Mar 55



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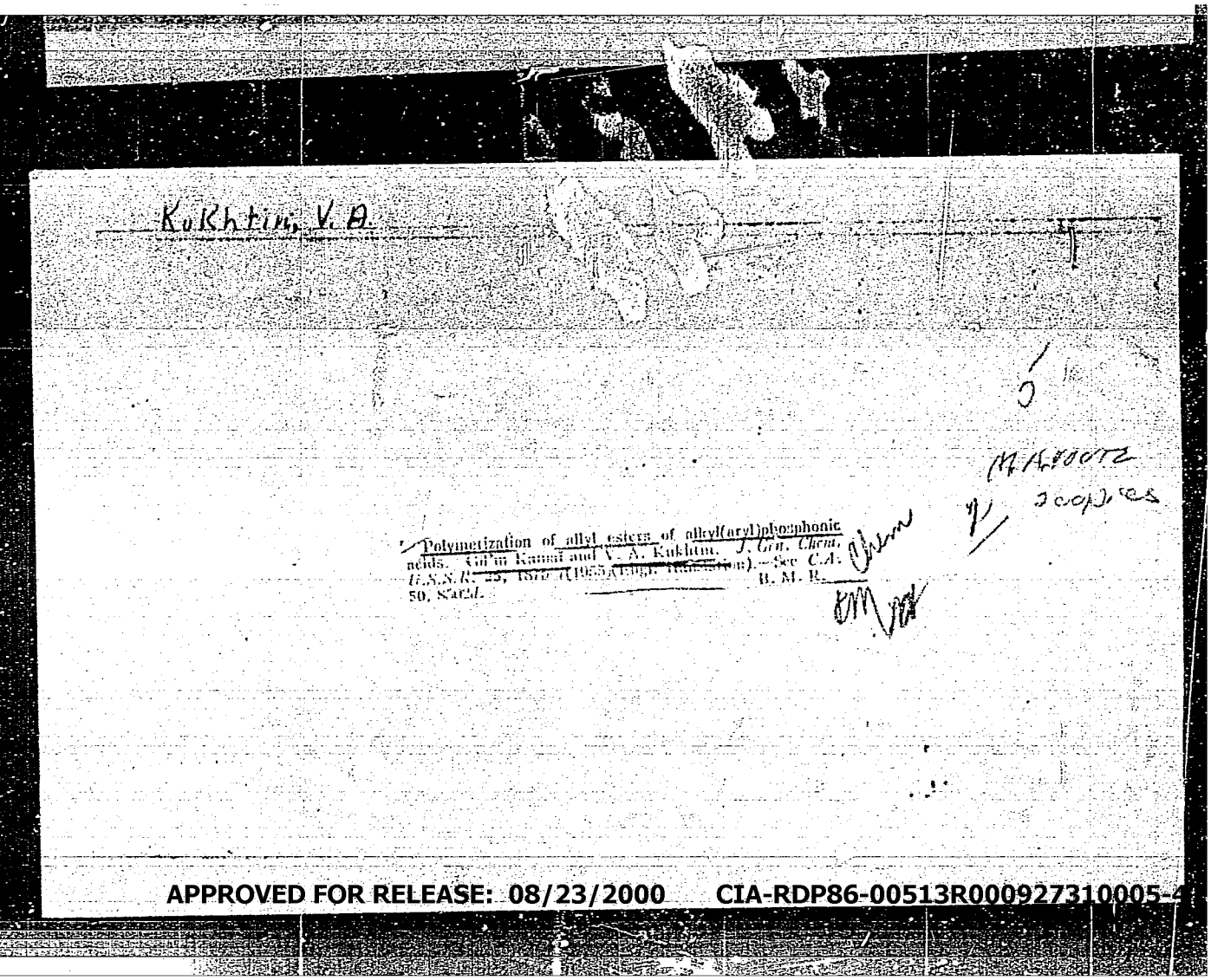

Kukhtin, V. A.

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3 copies

Polymerization of allyl esters of alkyl(aryl)phosphonic acids. Gil'm Kamai and V. A. Kukhtin. *J. Gen. Chem. U.S.S.R.* 25, 1812–7 (1955)(Engl. translation). See *C.A.* 50, 8424*d*.

B. M. R.

KURKTIN, V.A.

6002

M.A. YOUTZ
2 copies

(2)

Polymerization of allyl esters of alkyl(aryl)phosphonic acids. Gil'm Kamal and V. A. Kukhtin (S. M. Kirov Chem. Technol. Inst., Kazan). *Zhur. Obshchei Khim.* 25, 1032–5(1955); cf. *Trudy Kazan. Khim. Tekhnol. Inst.* 16, 29(1952); *C.A.* 49, 13071g.—To 40 g. CH_2:$CHCH_2OH$, 64 g. pyridine, and 300 ml. Et_2O was added with cooling 60 g. $PhPCl_2$; after filtration, the soln. was distd., yielding 42.6% $PhP(OCH_2CH:CH_2)_2$, b_3 116–17°, d_4^{20} 1.0620, d_4^{25} 1.0443, n_D^{20} 1.5240, and 13.3% isomerized ester, $PhP(O)(CH_2CH:CH_2)OCH_2CH:CH_2$, b_3 131–2°, d_4^{20} 1.0971, n_D^{20} 1.5280. Heating the former (29 g.) with 10 g. CH_2:$CHCH_2Br$ to 80° initiated the isomerization, completed in 2 hrs. at 100–10°, yielding 20 g. of the latter ester, b_3 131–2°, d_4^{20} 1.0980, n_D^{20} 1.5280. Similarly were obtained: $PhMeP(O)OCH_2CH:CH_2$, b_1 112–13°, n_D^{20} 1.5208, d_4^{20} 1.1110, and $PhEtP(O)OCH_2CH:CH_2$, b_3 124–5°, 1.5155, 1.0954. *p*-$ClC_6H_4PCl_2$ with CH_2:$CHCH_2OH$ in the presence of pyridine similarly gave 50.5% *p*-$ClC_6H_4P(OCH_2CH:CH_2)_2$, b_3 120–7°, 1.5376, 1.1490, and 10% *p*-$ClC_6H_4P(O)(CH_2CH:CH_2)OCH_2CH:CH_2$, b_3 148–9°, 1.5338, 1.1203; the latter is formed readily from the former by heating with allyl bromide. Similar reaction with MeI gave *p*-$ClC_6H_4PMe(O)OCH_2CH:CH_2$, b_3 129–30°, 1.5309, 1.1960. Polymerization of $RArP(O)OCH_2CH:CH_2$ was done at 70° with 1% Bz_2O_2, for 60–100 hrs. The Ph deriv. polymerized in 60 hrs. and the *p*-chlorophenyl in 100 hrs., provided the R was allyl; all others failed to polymerize even after 200 hrs. G. M. K.

Kukhtin, V.A.

USSR/Chemistry - Reaction processes

Card 1/1 Pub. 22 - 24/59

Authors : Kamay, G.L'm, and Kukhtin, V. A.

Title : Reaction of acetic anhydride with trialkylphosphites

Periodical : Dok. AN SSSR 102/2, 283-285, May 11, 1955

Abstract : It was established experimentally that the reaction between acetic anhydride and trialkylphosphites occurs at a temperature of 130-140°. The products derived from this reaction and their phys.-chem. properties are described. It is assumed that the investigated reaction is also common for other acid anhydrides. Seven Russ. and USSR references (1914-1954).

Institution : Kazan' Chemicotechnological Inst. im. S. M. Kirov

Presented by: Academician A. Ye. Arbuzov, December 27, 1954

KUKHTIN, V. A. and KAMAY, G.

"Reaction of Trialkl Phosphites with Some Organic Acids and Anhydrides"
paper presented at Mn First Conference on Phosphorous Compounds, Kazan, 8-10 Dec 56

SO: B-3,084,841

KOKHTIN, V.A.

5

Action of methyl esters of 1,2-dibromo- and 1,2-dichloropropionic acids on trialkyl phosphites and the sodium derivative of diethyl phosphite. [illegible] and V. A. Kokhtin. *Trudy Kazan. Khim. Tekhnol. Inst.* [illegible] 1956, No. 21, 141-6.—Heating 60 g. [illegible] and 85 g. $ClCH_2CHClCO_2Me$ to 100° [illegible] an exothermic reaction which gave 20.8 g. MeCl; distn. of residue gave 10 g. $C_6H_{11}O_4PCl_2$, b. 106-8°, d^{20} 1.2891, n_D^{20} 1.4553. Similar reaction of $(EtO)_3P$ gave 2 products: mainly $ClCH_2CH[PO(OEt)_2]CO_2Me$, b. 131-2°, d_4^{20} 1.1882, d^{20} 1.1620, n_D^{20} 1.4460, and a smaller amt. of $(EtO)_2P(O)CH_2CH[PO(OEt)_2]CO_2Me$, b. 164°, 1.1972, [illegible] 1.4474. The same reactants at 140-70° in 3 hrs. gave [illegible]% of expected amt. of EtCl and left a resin which, treated with Me_2CO-MeOH gave a polymer, m. 240-[illegible]°, identified as that of chloroacrylic ester; a little $(EtO)_3PO$ was recovered. The reaction of $(EtO)_2PONa$ from 60 g. ester with unstated amt. of $ClCH_2CHClCO_2Me$ gave unstated yield of $(EtO)_2P(O)CH_2CH[PO(OEt)_2]CO_2Me$, b. 182-[illegible]°, 1.1970, 1.1858,

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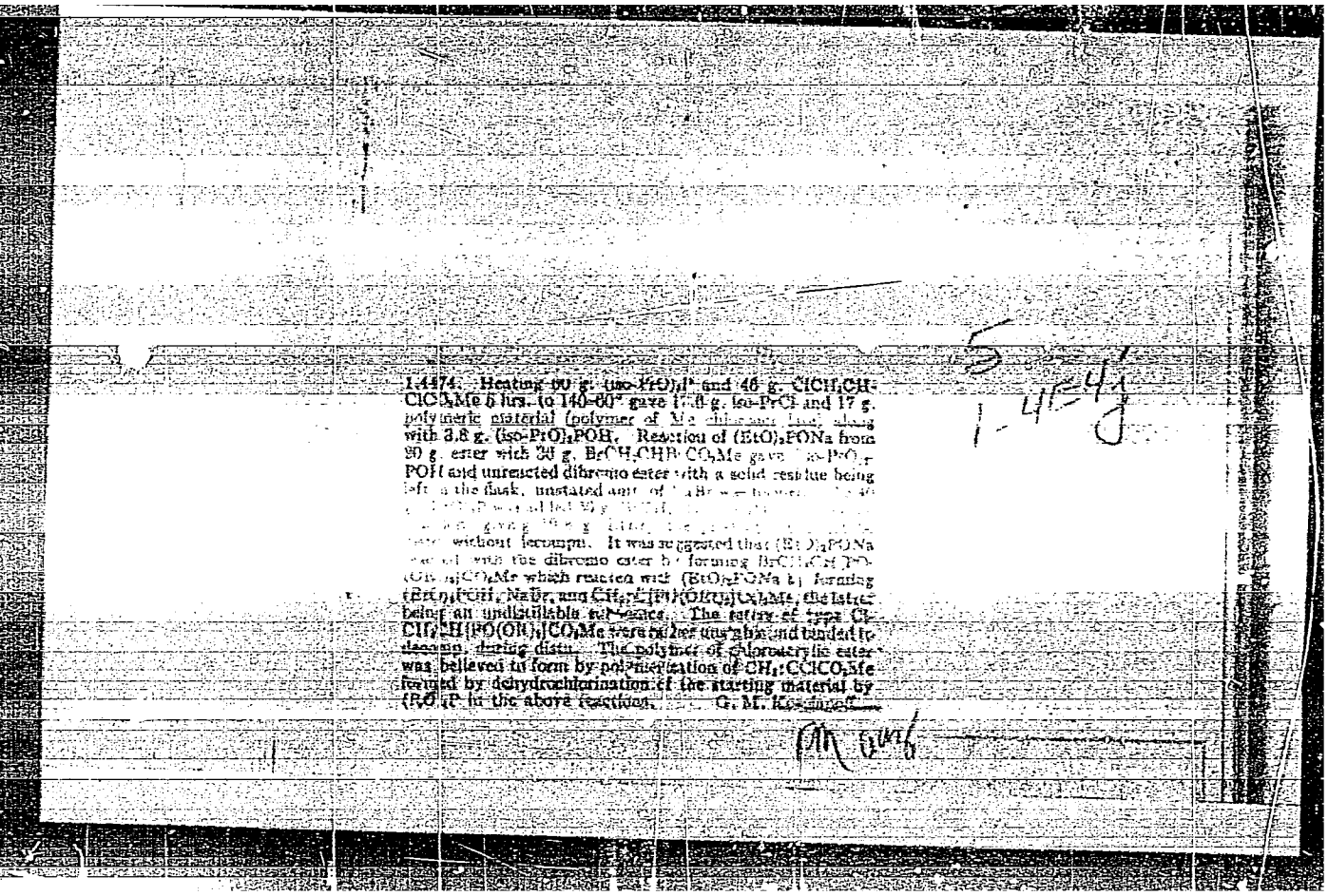

14474. Heating 90 g. (iso-PrO)$_3$P and 46 g. ClCH$_2$CHClCO$_2$Me 6 hrs. to 140-60° gave 17.8 g. iso-PrCl and 17 g. polymeric material (polymer of Me chloroacrylate), along with 3.8 g. (iso-PrO)$_2$POH. Reaction of (EtO)$_2$PONa from 90 g. ester with 30 g. BrCH$_2$CHBr·CO$_2$Me gave iso-PrO$_2$POH and unreacted dibromo ester with a solid residue being left in the flask, unstated amt. of [illegible] without ferrocyn. It was suggested that (EtO)$_2$PONa reacted with the dibromo ester by forming BrCH$_2$CH[P(OEt)$_2$]CO$_2$Me which reacted with (EtO)$_2$PONa to forming (EtO)$_2$POH, NaBr, and CH$_2$:C[P(OEt)$_2$]CO$_2$Me, the latter being an undistillable substance. The ester type ClCH$_2$CH[PO(OR)$_2$]CO$_2$Me were also unstable and tended to decomp. during distn. The polymer of chloroacrylic ester was believed to form by polymerization of CH$_2$:CClCO$_2$Me formed by dehydrochlorination of the starting material by (RO)$_3$P in the above reaction. G. M. Kosolapoff

KAMAY, Gil'm; KUKHTIN, V.A. (Kazan')

Tautomerism of diethylphosphorous acid. Trudy KKHTI no.21:147-154 '56. (MIRA 12:11)

(Phosphorous acid) (Tautomerism)

Kukhtin, V. A.

Reaction of trialkyl phosphites with some organic acids. ... A. Kukhtin ... *Kazan. Khim. Tekhnol. Inst. im. S. M. Kirova* 1956, No. 21, 155-8.—Heating 20 g. $(EtO)_3P$ and 7.2 g. AcOH 17 hrs. at ... gave on distn. 7.3 g. EtOAc and 12.2 g. $(EtO)_2POH$. Similarly, $(EtO)_3P$ and $PrCO_2H$ at 140-50° in 15 hrs. gave 85% $PrCO_2Et$ and 84% $(EtO)_2POH$. BzOH and $(EtO)_3P$ in 15 hrs. at 170° gave EtOBz and $(EtO)_2POH$. $(iso-BuO)_3P$ and AcOH in 11 hrs. at 120° gave 4 g. iso-BuOAc and 8 g. $(iso-BuO)_2POH$. Similarly heated 20 hr. at 125°, no reaction took place between AcOH and $EtPO(OEt)_2$.

G. M. Kosolapoff

KUKHTIN, V. A.

"Concerning the Addition Reaction of Trialkylphosphites to Certain Unsaturated Acids," by Gil'm Kamay and V. A. Kukhtin, Kazan Chemicotechnological Institute imeni S. M. Kirov, Doklady Akademii Nauk SSSR Vol 109, No 1, Jul 56, pp 91-93

The article discusses previous work and introduces analytical data supporting the existence of an addition mechanism of trialkylphosphites to unsaturated acids to form complete esters of the corresponding beta-phosphoncarboxylic acids. Another possible mechanism for this reaction, i.e., preliminary re-esterification of the components with the formation of dialkylphosphorous acid and an ester of an unsaturated acid, does not seem probable in view of the fact that under these conditions dialkylphosphorous acid does not add to acrylic acid without a catalyst.

This addition reaction of trialkylphosphites to unsaturated acids broadens the existing methods of preparing esters of phosphonic acids. (U)

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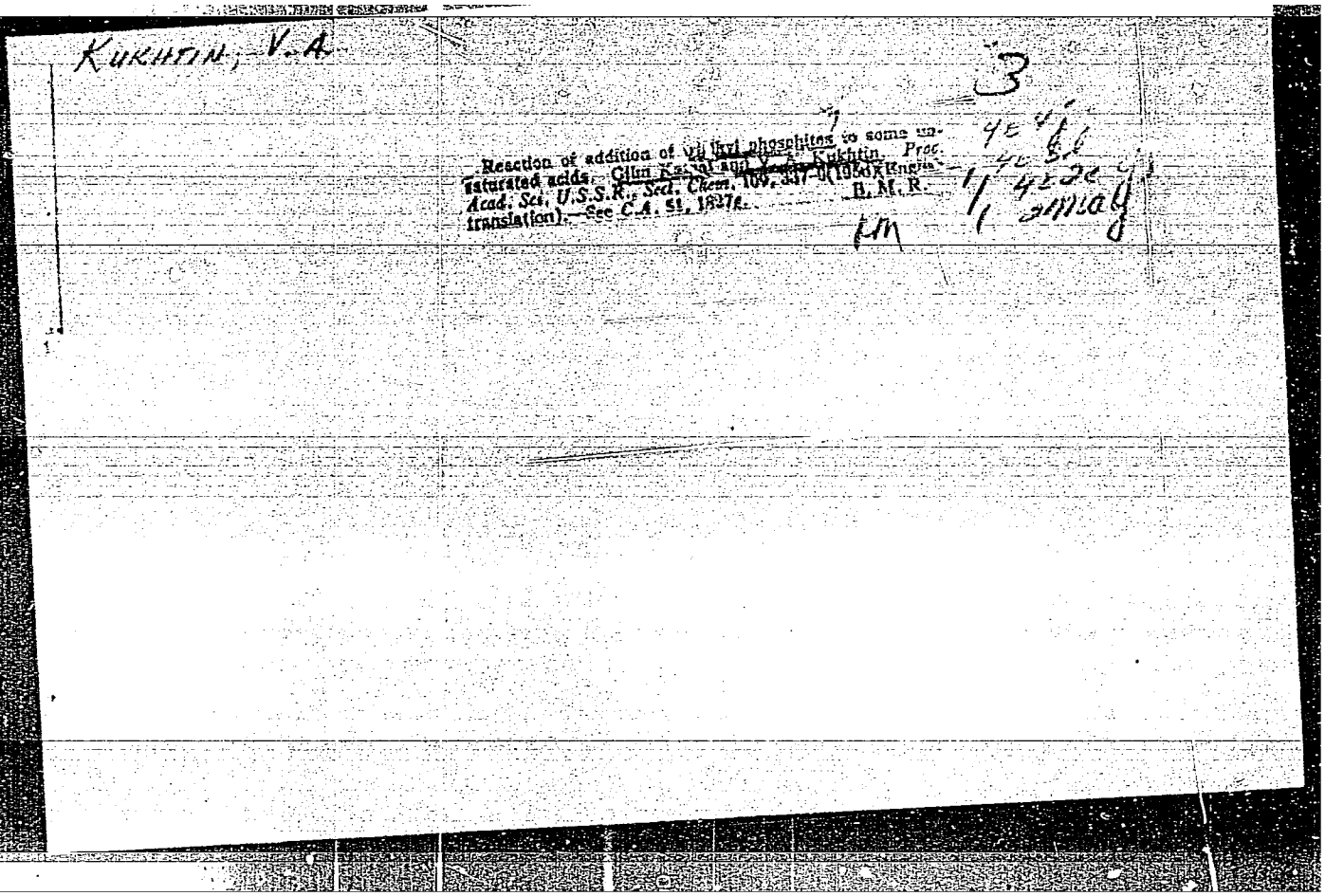

KURITSYN, V. A., and KOMY, G.

"Copolymerization of a few unsaturated esters of phosphoric acid," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Kazan University

B-3,084,395

[redacted], and KHAN, G.; S. M. Kirov Chemical Technological Institute

"Reaction of Trialkyl Phosphites with Some Organic Acids and Their Anhydrides," Khimiya i Primenenie Fosfororganicheskikh Soedinenii (Chemistry and Applications of Organophosphorous Compounds), 1 p. 91-8, 1957.

B-3,089,815; Full Translation

Kukhtin, V. A.

Distr: 4E4j/4E2c(j)/4E3d

Action of anhydrides of organic acids on trialkyl phosphites and on dialkyl sodiophosphite. V. A. Kukhtin (S. M. Kirov Chem.-Technol. Inst., Kazan). *Zhur. Obshchei Khim.* 27, 949-53(1957); cf. *C.A.* 50, 13727b.—Reaction of $(RCO)_2O$ with $(RO)_3P$ yields RCO_2R and $RCOP(O)(OR)_2$. Thus, heating 23.2 g. $(EtO)_3P$ and 20.4 g. Ac_2O 6 hrs. at 120-40° gave [illegible] EtOAc and [illegible] $AcP(O)(OEt)_2$, b_{10} 84-6°, n_D^{20} 1.41[illegible] [illegible] an intense color with sodium [illegible] which gave [illegible] phenylhydrazone, m. 152-3°, and gave a color with fuchsin-SO_2. In addn. there formed [illegible] unstated [illegible] teral, b_1 150-7°, 1.4325, 1.1579, which does not have an active carbonyl group and which was identical with a product isolted by Arbuzov and Azanovskaya (*Doklady Akad. Nauk S.S.S.R.* 58, 1061(1947)); this [illegible] $[PO(OEt)_2]_2$. Reaction of [illegible] g. [illegible] P and 7 g. Ac_2O in 6 hrs. at 110-20° gave 3.1 g. MeOAc and unstated yield of $AcPO(OMe)_2$, b_{10} 78-9°, 1.4206, 1.2109. Reaction of 20 g. $(EtO)_3P$ and 19 g. $(PrCO)_2O$ in 8 hrs. at 150° gave 7.2 g. EtO_2CPr, 4.0 g. $PrCOP(O)(OEt)_2$, b_3 124-5°, 1.4418, 1.0690, and 5 g. $PrCOP(O)(O_2CPr)OEt$, b_3 153-5°, 1.4335, 1.0547. $(EtO)_3P$ and Bz_2O similarly gave $BzP(O)(OEt)_2$, b_4 157-8°, 1.5010, 1.1591, and $BzP(O)(OBz)OEt$, b_1 194-6°, 1.6138, 1.1401. $(iso\text{-}BuO)_3P$ and Ac_2O gave $AcP(O)(OCH_2CHMe_2)_2$, b_4 144-6°, 1.4305, 1.0018, and $MeC(OAc)[PO(OCH_2CHMe_2)_2]_2$, b_3 174-8°, 1.4376, 1.0491. $(MeO)_3P$ and Bz_2O gave $BzP(O)(OMe)_2$, b_3 146-8°, 1.5254, 1.2405. Addn. of 15.5 g. Ac_2O to $(EtO)_2PONa$ from 20 g. $(EtO)_2POH$ and 3.5 g. Na in Et_2O gave a ppt. of NaOAc, and after 30 min. on a steam bath and filtration, there was obtained 50.7% $MeC(OAc)[PO(OEt)_2]_2$, b_3 157°, 1.4318, 1.1597. Similarly $(iso\text{-}PrO)_2PONa$ gave $MeC(OAc)[PO(OCHMe_2)_2]_2$, b_3 159-62°, 1.4312, 1.0823. G. M. Kosolapoff

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Addition of phosphorus and phosphinous acid esters to conjugated systems. Part 1: Addition of trialkyl phosphite to acrylic and metacrylic acids. Zhur. ob. khim. 27 no.9:2372-2376 S '57. (MIRA 11:3)

1.Kazanskiy khimiko-tekhnologicheskiy institut.
(Phosphorous acid) (Acrylic acid)

KUKHTIN V.A.

KAMAY, Gil'm; KUKHTIN, V.A.

Addition of phosphorus and phosphinous acid esters to conjugated systems. Part 2: Addition of trialkylphosphites to acrolein and crotonaldehyde. Zhur. ob. khim. 27 no.9:2376-2380 S '57. (MIRA 11:3)

1. Kazanskiy khimiko-tekhnologicheskiy institut.
(Phosphorous acid)
(Acrolein)
(Crotonaldehyde)

KUKHTIN, V.A.

"Addition of Trialkylphosphites to alpha,beta-Unsaturated Aldehydes," by Gil'm Kamay and V. A. Kukhtin, Kazan' Chemico-technological Institute imeni S. M. Kirov, Doklady Akademii Nauk SSSR, Vol 112, No 5, 1957, pp 868-871

The authors investigated the mechanism and conditions for the addition of trialkylphosphites to unsaturated aldehydes. Addition was found to take place at the 1-4 positions. Evidence is presented attesting to the formation of an intermediate product which helps to explain the mechanism of the reaction, which is proposed to take place in two stages according to the Arbuzov rearrangement. (U)

Sum. 1360